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Historical Society

SECOND DIRECTORY OF NEVADA TERRITORY;

EMBRACING A

GENERAL DIRECTORY OF RESIDENTS

OF ALL THE PRINCIPAL TOWNS;

BUSINESS DIRECTORY OF ADVERTISERS;

QUARTZ MILLS, REDUCTION WORKS, TOLL ROADS, ETC.;

OFFICERS OF THE MASONIC, ODD FELLOWS AND SONS OF TEM-
PERANCE ASSOCIATIONS; MEMBERS WASHOE STOCK BOARD
OF EXCHANGE; FIRE DEPARTMENT;

INCORPORATION ACTS OF VIRGINIA AND GOLD HILL;

AND ALL OTHER INFORMATION CONNECTED WITH THE PROGRESS AND PRESENT
CONDITION OF THE TERRITORY;

ALSO,

AN ACCURATE TABLE OF DISTANCES; LIST OF PUBLIC OFFICERS; AND
PRINCIPAL MINING LAWS OF DIFFERENT DISTRICTS; WITH
THE RESIDENTS AND PRINCIPAL MINES, MILLS,
ETC. OF THE

REESE RIVER REGION.

COMPILED FROM THE MOST RECENT AND AUTHENTIC SOURCES,

By J. WELLS KELLY.

VIRGINIA: A0080927

1883.

Printed by Valentino & Co., 517 Clay and 514 Commercial Streets, San Francisco.

Gold Hill Quartz Mill and Mining Co.	14 feet.
Imperial Mill and Mining Company..	60 "
Theodore Winters & Co.....	50 "
Davis & Dall.....	25 "
Pioneer Company.....	25 "
Confidence Company.....	25 "
Arrington & Co.....	25 "
Irvin Claim.....	30 "
Hamilton & Burke.....	40 "
Stewart & Kirkpatrick.....	30 "

UNION LEDGE.

Princess Company.....	500 feet.
Union Company.....	1,200 "
Laboring Company.....	900 "
Leon Company.....	800 "
Koh-i-noor.....	800 "
Itgen.....	200 "

CROWN POINT LEDGE.

Yellow Jacket.....	1,200 feet.
Crown Point.....	600 "
Kentuck.....	200 "
Sinaloa.....	1,200 "
Overman.....	1,000 "

URAL LEDGE.

Ural Company.....	900 feet.
Sunrise Company.....	1,200 "
Agate Company.....	600 "

Quartz Mills.

GRANITE MILL—Darst & Harris, proprietors, situated at the head of Main street. Stone, fire-proof building, eighty-six by forty-three feet; thirty-five feet high. Engine, forty horse power; five straight batteries, four stamps each, crushing twenty-five tons per day. Proprietors employ eight men, and crush rock from their own claim at Gold Hill. The latest improvements have been introduced into the amalgamating department. Superintended personally by the proprietors.

ECLIPSE MILL AND MINING COMPANY—(Grissim, Henderson & Co.)—Situated near the Granite Mill, is a building one hundred

dred feet by fifty in extent, built in 1861. Has a Corliss engine of forty horse power, from Goss & Lambard's Sacramento Works, driving fifteen stamps, and crushes fifteen tons per day. Amalgamate with thirty-six steam chamber pans. Employ ten men. This company own thirty feet in the centre of Gold Hill Proper, and is employed solely on their own rock. The mill is one of the most fortunate in the Territory, never having had any drawbacks since it first commenced running. Boiler fourteen feet long, fifty-four inches in diameter, and fifty-two tubes, made by Coffey & Risdon, San Francisco, and is one of the finest in the Territory; in fact, the proprietors assert that through the perfect working of the engine, and the admirable construction of the boiler, they save thirty-three per cent of fuel. Chas. Forman, Superintendent.

COMET MILL, owned by John Kneeland and Isaac L. Requa. Situated on the hill immediately back of town, and has sixteen stamps, of six hundred pounds each. In the amalgamating department there are thirty-two iron four-foot pans. Employ eight men, and crush fifteen tons per day.

DERRICK'S MILL.—Is driven by a sixteen horse power steam engine. Has two straight batteries, four stamps each, and crushes sixteen tons of rock per day. Does custom work, and employs six hands. Proprietor uses a process of his own, and has introduced arrastras, working for both gold and silver. This mill was brought over the mountains in eighteen hundred and sixty, from Oregon Gulch, Butte County, California, where it was known as the White & Nutter Mill. Present superintendent, and one of the owners, Mr. Rafael.

UNION MILL, a short distance above the Coover & Stevenson, has two four-stamp batteries from the Pacific Foundry, San Francisco, and crushes ten tons of rock per day. Present proprietors, Messrs. Zottman & Hitchcock. Engine of twenty horse power. Amalgamate with ten five-foot and two seven-foot pans from Vulcan Foundry. The lessees have a process of their own. Work for both gold and silver, and employ six men.

COOVER & STEVENSON MILL, situated on Gold Cañon, in the town of Gold Hill, and claims to be the first that ever got up steam in the Territory. It is now running eight stamps, which are constantly employed crushing rock from the proprietors' claim, in the celebrated Gold Hill. In the amalgamating department are nine of Knox's improved pans with steam chambers. Chas. S. Coover, superintendent.

THE NEVADA MILL, formerly the Washoe Gold and Silver Mining Co.'s Mill, now owned by the Imperial Silver Mining Company, is one hundred and ten feet long and seventy-five wide. The engine is of sixty horse power, drives five Howland's batteries, of which four have eight stamps each, and one twelve stamps, crushing thirty tons of rock per day. It has seventy-two amalgamating pans, and runs day and night. Employ only six men on a watch. This company crushes rock from its own mine in Gold Hill Proper.

GOLD HILL QUARTZ MILL AND MINING COMPANY.—Works erected in spring of '61. Building seventy-four by thirty-five feet: steam engine of thirty-five horse power from the Pacific Foundry. Has thirteen stamps, and crushes, on an average, ten tons of rock per day. Employ fourteen hands, and use in amalgamating department twenty-four pans with steam chambers, and heavy mullers of latest and best description. This company has lately purchased fourteen feet of the celebrated Rice claim, and its capital has been increased to two hundred and fifty thousand dollars. P. Pioda, superintendent.

CROWN POINT MILL.—At the mouth of Crown Point Ravine, is at present undergoing repairs, and as it is the intention of the company to greatly enlarge its capacity, we are unable to mention the particulars.

THISTLE MILL.—L. S. Bowers, proprietor,—Situated in Crown Point Ravine, is covered by a substantial building one hundred and eighty-three by forty-four feet. Runs two straight batteries of ten stamps each, and crushes twenty tons of rock per day. Employs twelve men; uses thirty five-foot amalgamating

pans, with steam chests for heating pulp. Proprietor has a process of his own, and crushes rock from his claim in Gold Hill Proper.

SAPPHIRE MILL AND MINING CO.—Messrs. J. B. Gagnon & Co., proprietors. Building sixty-one by fifty-eight feet. Steam engine of thirty-four horse power. Employ fourteen hands; run four straight batteries, of four stamps each; crush twenty-four tons per day. Purchase rock, and also crush ore from their own claim. Thirty-two of Knox's steam flue pans are used in amalgamating. J. B. Gagnon, Superintendent.

PETALUMA MILL.—Messrs. Fritsch, Zartman & Co., proprietors—now leased by David B. Hunt and P. G. Childs. Is situated below the Sapphire Mill, and is driven by a twenty-one horse power steam engine. Use for amalgamating twelve of Goddard & Co.'s five-foot steam flue pans, which, with the engine, are from the Pacific Foundry, San Francisco. Works for both gold and silver. The lessees have a process of their own. Has been constantly running since July, 1862. Employs eight hands, crushing ten tons per day, and doing custom work. Superintended by J. B. Hunt.

RHODE ISLAND MILL.—owned by Messrs. G. L. Smith, Wade & Potter, and T. V. Barney. Built in the fall of '62, under the supervision of George L. Smith, the present superintendent. Engine of forty horse power, driving twenty stamps of six hundred pounds each. For amalgamating, use the ordinary steam pans, built on an improved plan expressly for this company. Use the wet crushing, and what is known as the "sage brush" process. Building one hundred feet by fifty-three, and is one of the most substantial in the Territory. Its mechanical arrangement is most convenient, and it is attended with less labor than any other mill of the same capacity.

STEWART, KIRKPATRICK & Co.'s MILL.—Located on Gold Cañon, one half mile below Gold Hill—was erected in the fall of 1861, and commenced crushing ore January 1st, 1862. The main building is fifty by one hundred and twenty feet,

with an engine room and wood-house attached, twenty by sixty-five feet. The engine is of forty horse power, drives four batteries of four stamps each, capable of crushing twenty-five tons of ore per day; two large stamps of one thousand six hundred pounds each, for breaking coarse rock, and fifty amalgamating pans. The grandest feature of this mill is the convenience of its locality, and the perfectness with which every department is constructed, thereby securing great economy in labor. The dump is an excavation in front of the batteries, twenty by fifty feet, capable of holding six hundred tons of rock; thus, when a load of rock is dumped from the wagon it is deposited immediately in front of the batteries, convenient for the feeder. Immediately below the batteries are eight large vats, into which the ore, after being crushed, is carried through troughs leading from the batteries, where it remains until thoroughly settled, when it is assorted and conveyed by means of a car to the amalgamating rooms below. As a matter of locality, convenience and durability, this establishment is unsurpassed by any mill in the Territory, and but few exceed it in capacity. In the rear of the building are four immense vats, each twenty by forty feet and eight feet deep, into which the slush from the drying department is deposited, thereby saving every particle of ore, an item in the saving process which commands the attention of mill owners. The company employ twenty-five men, and crush rock from the Gould & Curry mine. S. D. E. Stewart, Superintendent.

MARYSVILLE MILL—Messrs. W. T. O'Neale, Isaac and Samuel Glazier, and John Rule, proprietors—situated on Gold Cañon. Has nine very heavy stamps, weighing eight hundred and fifty pounds each. Engine of thirty-five horse power, from Marysville Foundry. Two boilers, one thirty inch and one thirty-six inch; two Chile mills, and thirty five-foot amalgamating pans, with steam chambers, from Vulcan Foundry, San Francisco. Work for both gold and silver, crushing twenty tons per day. Company have a process of their own, and employ fourteen hands. Purchase ore, and crush for customers. Superintended by W. T. O'Neale.

CENTERVILLE MILL—Douglass, Wheeler & Co. proprietors, situated on Gold Cañon, immediately below the Marysville Mill. Ten stamps, of seven hundred and twenty-two pounds each, propelled by a twenty-eight horse power engine, capable of reducing seventeen tons of rock per day. Use twenty-four pans for amalgamating, so arranged that steam can be introduced for facilitating the process. The pans are from the Miners' Foundry, and other machinery from the Fulton Foundry, San Francisco. Company employ twelve hands, have a process of their own, and purchase rock, or crush for customers. Building fifty-two by sixty feet.

SUCCOR MILL AND MINING COMPANY, Gold Hill District, situated at the Succor Mine. The owners are Judge R. H. Waller, Jos. H. Moore, E. J. Moore, Dr. Benj. Ober, Robert Hawxhurst, George Stears, James Grant and J. Kittridge.

This company had just completed a mill on Carson River, to run by water power, in the winter of 1862, when, during an unprecedented rise in the river, caused by heavy rains and the sudden thawing of snow on the mountains, the channel of the river changed, thereby destroying their valuable water power, and carrying away several hundred tons of quartz. The frame of the mill was removed to its present location, and additions made to the building, etc. It has now a sixty horse power engine, driving fifteen stamps, and is capable of crushing about twenty tons per day. The amalgamating pans were found to be imperfect, and the company are about substituting the Wheeler pans. Oren Belding was the builder of the mill, the workmanship and design of which is considered by competent judges second to none in the Territory. J. M. Moore is General Superintendent of Mill and Mine.

With the admirable car track arrangement, twenty-five tons per day can be delivered to the mill, by the labor of two men, at a cost of twenty-five cents per ton.

St. Louis Co.'s MILL.—Is situated in Gold Cañon, one-fourth mile above Devil's Gate. Building fifty by sixty feet. Has four arastras and one of Broadhurst's Crusher's, capable of pulverizing twenty tons of rock daily; driven by a steam en-

gine of forty horse power, from Miners' Foundry, San Francisco. The amalgamating is done by what is known as the "Sage Brush" process; the arastras are of large size Mexican, with modern improvements. The company crush rock taken from their own claim, situated near the celebrated "Waller's Defeat" Claim, the first ever located below Gold Hill, having been taken up in August, eighteen hundred and fifty-nine. The St. Louis is also a very valuable piece of mining ground, and has been thoroughly opened by means of tunnels amounting in the aggregate to over a thousand feet. This mill employs thirty hands, and is superintended by Mr. Owens.

AMERICAN FLAT MILL, (H. Martin Smith, H. W. Johnson, and A. Wade, proprietors,) situated on American Flat, two and a half miles from Gold Hill. Built in 1861. Has ten stamps, crushing ten tons per day. Also, six seven-foot tubs for amalgamating; the company having a process of their own. Employ nine men. Purchase rock, and also crush for customers. Have a splendid engine of twenty-five horse power, from the Union Iron Works, San Francisco. This mill has been employed constantly throughout the past year, its owners being active, energetic business men. In connection with this mill there is one of the best water privileges in the Territory; there being sufficient escape water power for two more mills. G. K. Reed, Superintendent.

RIGBY & Co.'s MILL, situated on American Flat, at head of American Ravine, one and a half miles from Silver City. Was built in 1862. Building twenty-four by fifty-four feet. Has ten stamps, crushing twelve tons per day. Employ ten men. In the amalgamating department there are five Varney's Improved Pans, together with four settling tubs. Crush custom rock, though the company has an interest in the Globe Tunnel on American Flat, from which they shortly expect to obtain rock sufficient to keep their mill continually running. Have a splendid engine of thirty horse power. The battery irons and gearing are from the Pacific Foundry, and the pans from the Union Foundry, San Francisco. Superintended by James A. Rigby.

THE PIONEER FOUNDRY, at Gold Hill, is one of the main supports of the Territory, from which the mills derive their castings in emergencies, which are constantly arising among the innumerable breakages and wear-outs of wheels, gears, stamps, dies, etc. They are also prepared to do, and have done a great deal of new work on batteries, amalgamating tubs, pans, etc., and their assortment of patterns now comprises nearly everything used in the Territory, and their sources of information in regard to the wants of the country in machinery are superior to any. Now owned and conducted by O. Hyde.

Toll-Roads.

Leading from Gold Hill are two toll-roads—one owned by W. R. Armstrong and G. D. Roberts; the other by Messrs. Waters & Carson. The former runs down Gold Cañon to Dayton, a distance of seven miles; and being the route over which most of the quartz passes to the various mills below, has an immense travel, with a corresponding income. It was commenced in September, '59, and has cost about fifty thousand dollars. The other extends from the town to the Half Way House, on the Carson Road—it was built in 1861, and cost twelve thousand dollars.

RESIDENTS OF GOLD HILL.

ABBREVIATIONS.

bds. boards. nr. near. res. resides. op. opposite.

A

ABELL WM. B. laborer Imperial Co.'s Mill
Abells S. V. laborer American Flat Mill
Ackers H. H. laborer with Boquist & Farr
Adam Reber, laborer Gold Hill Mining Co.
Adams J. P. miner, res North Main street
Alabama Claim, situated Gold Hill District, near St. Louis Mill
Alban W. G., M.D. office North Main, op Gold Hill Bakery
Alhambra Hotel (Peter Munson, propr) Main street, opposite Sapphire Mill
Allard J. feeder Stewart, Kirkpatrick & Co.'s Mill
Allard P. laborer Imperial Co.'s Mill

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Denver State
Historical Society

MERCANTILE GUIDE

AND

DIRECTORY

FOR

Virginia City, Gold Hill, Silver City

AND

AMERICAN CITY,

COMPRISING

A General Business and Resident Directory
for those Cities, with Sketches of
their growth, development
and resources.

ALSO CONTAINING

Valuable Historical and Statistical Matter
OF UNUSUAL INTEREST,

TOGETHER WITH THE ONLY

ACCURATE MINING DIRECTORY

YET PUBLISHED,

*Giving the name of the Mine, number of feet in each
claim, the District in which the same is located,
and the names of Secretaries, with their
respective places of business.*

COMPILED BY

CHARLES COLLINS.

VIRGINIA:
1864-5.

PRINTED BY JENNEY & DEVEREUX, BOOK AND JOB PRINTERS, 511 SANBORN STREET, F.

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FOUNDRIES.

The rapid increase and continual demand for machinery, as well as the constant repair, necessary to keep the various mills in this District in working order, has given a great stimulus to this branch of trade.

PIONEER FOUNDRY.—This foundry, as its name indicates, was one of the first in the Territory. In 1863, the owner suffered a severe loss by having the whole of his foundry burned to the ground, with the loss of nearly all of the machinery. With characteristic energy he commenced and has now in full blast another foundry, which is creditable alike to himself and the Territory. The building, which is 126 by 30 feet, with a wing 40 by 50, is built of brick, with tin roof, and is now considered fire-proof. It has all the latest improvements for turning out all kinds of machinery. Attached to the foundry is a machine shop.

EMPIRE FOUNDRY.—This foundry has recently been built on the most approved plan, and has excellent facilities for the manufacture of all kinds of machinery. Situated on the Divide, between Virginia and Gold Hill, its location makes it easy of access for the surrounding mills. The proprietors, Messrs. Hubbard, McAdams & Maxon, have had a life-time experience in the business, and are all practical foundrymen and machinists.

Another foundry is being erected in Lower Gold Hill, by McCondy & Co.

NEWSPAPERS.

The Gold Hill (evening) "News" Lynch & Mundall prop'rs, was started in 1863, by its present proprietors. The ability and judgment displayed in its management has gained for it a reputation second to none in the Territory. It is noted for its plain, out-spoken discussion of every subject that comes within its notice, and is remarkable for its devotion to the Union. It contains daily a large amount of matter relating to the mines of the Territory—the laws of the Territory requiring that all assessment sales and other matters relating to the mines shall be published in the columns of the nearest paper—has given a prestige and brought pecuniary patronage to the "News" which none of its contemporaries enjoy; it is, undoubtedly, the best paying paper in the Territory. Its editorials are models of sound

HODGE & WOOD, Wholesale Stationers, 418 & 420 Clay St., S. F.

judgment and good sense, and the local columns are characterized by wit, ability and a desire to keep its readers posted on everything that takes place within its sphere.

DAILY MORNING MESSAGE—was started on the 23d May, 1864, by Geo. W. Bloor, D. M. Sandidge and H. W. Johnson. The "Message" is issued daily. The experience of the publishers will enable them to give to their patrons a valuable paper. It has received very complimentary notices from its contemporaries. It contains all the current news of the day; and, no doubt, will render itself a welcome visitor to every resident of Gold Hill and the Territory.

CITY OFFICIALS.

City Marshall, S. Arnold; Police Judge, L. H. Robinson; County Clerk, E. W. Pease; Justice of the Peace, S. A. Kellogg; Board of Trustees, C. H. Van Gorder, President, J. V. A. Lansing, L. H. Robinson, C. H. Coover, and G. Douglas; Capt. J. McClory, jailer; Policemen, Thomas Johnson, John Householder, Andrew Russell and W. R. Surin.

QUARTZ MILLS AND HOISTING WORKS.

The following are the names of Quartz Mills and Hoisting works, with their capacity, in this District:

PIONEER MILL—Coover & Stephenson proprietors; was erected in 1860, and claims to be the oldest Mill in the Territory, which is clearly illustrated by its present dilapidated exterior; although its machinery is not as modern as its neighbors, the experience of its proprietors more than makes up for this deficiency. Although its capacities are limited, it has rendered larger dividends to its owners than mills of much greater capacity. It is a fact worthy of note that the mill is owned and worked by its first founders; it has an eight stamp rotary battery and nine amalgamating pans.

SEALES' MILL.—This Mill is owned by Seales & Anderson. It was erected in 1862; has an engine of sixteen-horse power which runs five stamps and five amalgamating pans. The owners of this Mill, at an early date, contemplate adding five more stamps with six amalgamating pans to be driven by a new engine of fifty-horse power.

Dealers in School Books and Cheap Publications.

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EMPIRE MILL No. 2.—Owned by the Empire Mill and Mining Company, is situated in Gold Hill. It has an engine of sixty-horse power which drives sixteen stamps, two rock breakers of two thousand pounds each, with fifty-two amalgamating pans. R. N. Graves superintendent. This Company intend adding thirty more stamps, twenty "wheelers" and a new engine of one hundred and fifty-horse power, during the coming Summer. This is one of the most extensive Quartz Mills in Gold Hill.

THE IMPERIAL MILL.—The property of the Imperial Mill and Mining Company; situated in Lower Gold Hill; was erected in 1860. It has forty-four stamps, sixty-six amalgamating pans and is driven by an engine of forty-horse power. This Mill has recently had sixteen new stamps added to it, and is classed among the finest in the District. It is under the superintendence of J. C. Corey.

PETALUMA MILL.—Owned by S. L. Greely; is situated in Lower Gold Hill. It runs eight stamps, and fourteen pans with an engine of twenty-horse power, built at the Pacific Foundry, San Francisco. S. L. Greeley superintendent.

SAPPHIRE MILL.—This Mill is owned by the Sapphire Mill Co. It was built in 1862; has sixteen stamps and forty pans, which are driven by an engine of thirty-five-horse power. Under the superintendence of J. B. Gaznon. This Company intend adding new boilers during the Summer.

THE PACIFIC MILL.—Messrs. C. B. Land & Co., have just erected a mill below the Pioneer Foundry, to which they have given the above name. The main building is 100 feet in length by 72 in breadth. The machinery is from the Miners' Foundry, San Francisco. The engine is of 120-horse power, cylinder 16 inch, 3 feet stroke. It has two boilers, 16 feet long and 48 inches in diameter. It runs 40 stamps, and one of Blake's patent crushers, together with pans sufficient to amalgamate 40 tons per day, which is about the working capacity of the mill.

SUCCOUR MILL.—Built in 1862; is situated in Lower Gold Hill. It runs 15 stamps, 24 pans; has a 34-horse engine; owned by George Stead & Co. D. B. Hunt, superintendent.

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DOUGLAS MILL.—Formerly known as the Centreville Mill, is owned by Messrs. Gilbert, Douglas & Starr; situated in Lower Gold Hill. It was erected in 1861; has 10 stamps, 24 pans, and an engine of 24-horse power. The machinery was built at the Fulton Foundry.

MARYSVILLE MILL.—Owned by Rule, O'Neil & Co.; has an engine of 25-horse power; runs 9 stamps, 30 pans, and was built in 1861.

GRANITE MILL.—Was built in 1861; owned by Truett, Darst & Harris. This Mill runs 16 stamps, 16 pans, and 2 separators, with an engine of 40-horse power. It is located in Gold Hill proper, and the material with which it is built is stone. It is the only Quartz Mill in the Territory which is considered to be fire-proof. The building is 86 by 43 feet.

COMET MILL.—Owned by Nealand & Requa; has battery of 16 stamps; employs 8 men; superintended by Isaac Requa; is situated a short distance back of the city. For amalgamating purposes, it has 32 4-foot pans.

CROWN POINT MILL.—This mill is owned by the Crown Point Gold and Silver Mining Company. It was erected in 1861; situated in Crown Point Ravine. It has 8 stamps, 14 amalgamating pans, and is driven by an engine of 40-horse power. H. Woodcock, superintendent.

UNION MILL.—Owned by the Union Mill and Mining Co. Is situated in Gold Hill; has 8 stamps 12 pans, and is driven by a 25-horse power engine. Was built in 1861.

GOLD HILL MILL.—Owned by the Gold Hill Mining Company. Built in 1861; building 74 by 35 feet; runs 13 stamps and 24 pans, with an engine of 35-horse power, from the Pacific Foundry, San Francisco. The Mill is under the supervision of Chas. Pioda.

ECLIPSE MILL.—Owned by the Eclipse Mill and Mining Co. Built in 1860; located in Gold Hill; runs 15 stamps, 12 pans, with an engine of 40-horse power. Employs 10 men.

AMERICAN FLAT MILL.—Situated two and a half miles from Gold Hill; was built in 1861; engine 25-horse power, and built at the Union Iron Works, San Francisco.

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RIGBY & Co.'s MILL.—Situated at head of American Ravine. Machinery from the Pacific Foundry, San Francisco.

ST. LOUIS Co.'s MILL.—Is situated in Gold Cañon, a short distance above the Devil's Gate; building 60 by 50 feet; engine 40-horse power. The machinery was built at the Miner's Foundry, San Francisco.

BOWERS' MILL.—Built and owned by L. S. Bowers. It is situated in Crown Point Ravine, Gold Hill; runs 20 stamps and 30 pans, with an engine of 30-horse power. Under the superintendence of James Mee.

STEWART & Co.'s MILL.—Located on Gold Cañon, a short distance below Gold Hill; was erected in the fall of 1861. This is one of the largest Mills in the Territory, and for convenience and perfection of arrangement, is not surpassed by any.

RHODE ISLAND MILL.—Is owned by G. L. Smith, T. V. Barney and H. B. Potter. This Mill is situated in Gold Hill; runs 25 stamps and 20 pans, with an engine of 40-horse power. G. L. Smith, superintendent. It is classed amongst the finest in the District.

HOISTING WORKS.

ALTA HOISTING WORKS.—Owned by the Imperial Company; built in 1863; situated in Upper Gold Hill; size 80 by 40.

EMPIRE HOISTING WORKS.—Owned by the Empire Mill and Mining Company; erected in 1863; has an engine of 45-horse power; employs 60 men; size of building 65 by 40; wing 40 by 41—making a front of 66 feet.

ECLIPSE HOISTING WORKS.—Built in 1863, and owned by the Eclipse Company. Has a shaft 12 feet long by 4 wide, divided into three departments; engine 25-horse power.

CONSOLIDATED No. 1.—Owned by the Consolidated Mining Company. Constructed in 1863; engine of 18-horse power.

The Rice Company work their Mine through the Consolidated Company's Shaft.

CROESUS WORKS.—Situated in Gold Hill; built in 1864; size of building 86 by 50. Has an engine of 50-horse power.

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BULLION HOISTING WORKS.—Owned by the Bullion Mining Company; situated in Upper Gold Hill. These Works were erected in 1863; has an engine of 40-horse power. This Company is putting up a new engine. It is the best finished Hoisting apparatus in Gold Hill. J. M. Walker, general superintendent.

BELCHER HOISTING WORKS.—Erected in 1864. Size of main building, 40 by 65; carpenter shop, 20 by 40; has an engine of 30-horse power; employs 45 men. Superintended by John Lambert.

MICHIGAN MINING AND HOISTING WORKS.—Owned by the Michigan Mining Co. Went into operation in 1864; has an engine of 16-horse power; size of building 16 by 35; this Company employs 15 men. Under the supervision of Geo. Swernson.

MARY ANN MINING Co's WORKS.—In Gold Hill District; built in 1864; contemplate erecting additional machinery during the Summer; which, when completed, will be amongst the finest and most complete hoisting works in the Territory.

CONFIDENCE HOISTING WORKS.—Situated in Gold Hill; was constructed in 1863; is owned by the Confidence Mining Company; engine 35-horse power. Matthew Irving superintendent.

LOGAN & HOLMES' HOISTING WORKS.—Was built in 1862; located in Gold Hill; has an engine of 60-horse power.

LUTHERNE HOISTING WORKS.—Situated in Lower Gold Hill; size 27 by 65 feet; has an engine of 24-horse power; owned by the San Francisco Company, and superintended by William Henicks.

OMEGA MINING COMPANY.—This Company are about erecting machinery on their claim.

MINERVA MINING COMPANY.—This Company have ordered machinery and contemplate erecting it during the Summer.

ALPHA MINING WORKS.—Owned by the Alpha Mining Company; was built in 1863; is situated on Upper Gold Hill; has an engine of 30-horse power.

YELLOW JACKET MINING WORKS.—Situated in Gold Hill, adjoining the Confidence Works, is owned by the Yellow Jacket Mining Co. These Works have got hoisting works and machinery which is not excelled by any in the District. Engine house is 36 by 52 feet; timber house 52 by 46; the main shaft is down a distance of 300 feet. About 70 tons of ore is taken out daily. This Company have also an incline of 275 feet, through which the mine is being worked until it is struck by the main shaft. The engine is 40-horse power and was built at the Miner's Foundry, San Francisco. J. B. Winters, President; Sam'l Hyatt, Sec'y; James M. Day, Superintendent.

Dealers in Every Variety of Staple and Fancy Stationery.

with 2 7-foot amalgamating pans, and is driven by a 32-foot water-wheel. Small though this Mill may appear in comparison with those surrounding it, yet owing to the advantages of water-power, and good management, it is perhaps more profitable to its owners than Mills that boast of greater capacities.

BACON QUARTZ MILL.—Owned by the "Bacon Mill and Mining Co.," situated at the junction of Gold Cañon and American Ravine, below Silver City. Was first built in 1862, and re-built in 1863. It runs 30 straight stamps, has 18 4-foot and 16 5-foot pans, and is driven by an engine of 45-horse power. It reduces 20 tons of ore in 24 hours. Samuel Doake, Superintendent; L. S. Phillips, Foreman.

SPARROW, TRENCH & CO.'S MILL.—Is located in American Ravine, a short distance above the Sierra Nevada Hotel. Was built during the summer of 1860. Size of building 90 by 75 feet. It has 20 stamps and 16 7-foot pans; driven by an engine of 60-horse power. This Mill reduces about 20 tons of rock per day, which is taken from the Company's Claim at Gold Hill. It employs 15 hands, working day and night, and is under the superintendence of Joseph Trench.

BARTOLA MILL.—Is located in Gold Cañon, below Silver City. It is at present leased to John White. It has 8 stamps and 8 pans, with a crushing capacity of 10 tons of ore every 24 hours. It is propelled by a 16-horse power steam engine; employs nine men, and is under the supervision of the lessee.

UNION MILL.—Owned by George A. Hudson; was built in 1861. It is situated in American Ravine, a short distance above the Bacon Mill. It has 2 5-stamp batteries, driven by an engine of 20-horse power, and is capable of crushing 15 tons of ore in 24 hours. In the amalgamating department there are 8 7-foot amalgamating wooden tubs, with one small Wakelee pan. Employs about 10 men. George A. Hudson, superintendent.

EASTERN SLOPE MILL.—Is situated one-half mile below Devil's Gate. Commenced operations in 1861. Was then owned by the Eastern Slope Mill and Mining Co., but has since changed hands, and is now in the possession of Edward McLean. It has 12 stamps of 950 pounds each, which crush 20 tons of quartz in 24 hours. It has 6 Hepburn pans, 3 separators, and has an outer

HODGE & WOOD, Wholesale Stationers, 418 & 420 Clay St., S. F.;

settler and flumes for catching quicksilver and amalgam. It is propelled by a steam engine of 45-horse power, from the Pacific Foundry, San Francisco. Employs 14 men. Edward McLean, superintendent.

PHOENIX No. 1.—Was erected in 1860, by C. S. Kellogg. At that time it had 8 wooden stamps, which have been since replaced by 16 iron ones. It has 4 Hepburn pans and 2 settlers, driven by an engine of 24-horse power, with boiler to correspond. Employs nine men and runs day and night. Under the supervision of Charles Uznay.

PHOENIX No. 2.—Was constructed in 1861, and has a front of 100 by 80 feet. It has 4 batteries of 5 stamps each; runs 22 amalgamating pans of 6 feet in diameter and 12 of 5 feet. It has also a prospecting battery of 2 small stamps. The whole making a crushing capacity of 25 to 30 tons of quartz per day. It is to be propelled by a new and splendid steam engine of 70-horse power, and employs 17 men, and is also under the supervision of Mr. Charles Uznay.

There are a number of stone and frame houses adjoining these two Mills, which are used for offices, retorting rooms, boarding houses for the hands and residence of the proprietor and superintendents.

EXCELSIOR QUARTZ MILL.—Is situated in John Town, about one-quarter of a mile below the Swansea. It was built in 1861 and started in November of the same year. It has 8 stamps of 900 pounds each, which work about 12 tons of rock in 24 hours, and has also 10 amalgamating pans; is propelled by an engine of 40-horse power, built at the Vulcan Iron Works, San Francisco. Employs nine men; under the supervision of Mr. John Briggs, one of the owners.

SWANSEA MILL.—Owned by John Tregloan; is situated just below the Phoenix Mill, in Gold Cañon; was built in 1862 and started in June of the same year. It has 12 double-stem stamps of 800 pounds each, 18 6-foot amalgamators, 2 5-foot tubs and 3 concentrators. The capacity of the engine is 40-horse power, with a 12-inch cylinder of 3-foot stroke. This Mill is capable of reducing 18 tons of quartz in 24 hours, and is under the supervision of Mr. John Tregloan, the owner.

Dealers in Blank Books, Legal and Commercial-Blanks.

EAGLE MILL.—Is now being built by H. B. Jones (proprietor). It will have three straight stamps with two pans, and will be driven by water-power—the wheel of which is 24 feet in diameter. As this Mill is to be driven by the same power as the Knickerbocker, with careful management there is no doubt but it will prove a source of profit to its owner.

MERCHANT'S MILL.—Situated in Gold Cañon, below the Phoenix, at the junction of Rock Point Mill and Dayton road; was constructed in 1861; has 12 stamps, 8 wooden amalgamators and 9 iron pans. It reduces about 15 tons of quartz in 24 hours—running night and day. It is propelled by an engine of 15-horse power, and employs 12 hands. Its machinery is adapted for working all the precious metals, and is under the supervision of C. A. Chapin.

SACRAMENTO QUARTZ MILL.—Owned by the Sacramento Mill Co.; located in John Town; situated one mile below Silver City; has 12 stamps, working 20 tons of quartz in 24 hours; weight of stamps, 950 pounds each. It has also 12 amalgamating pans of 7 feet in diameter, and is driven by an engine of 60-horse power; employs 11 men, working night and day. J. W. L. Hunt, superintendent.

MILITARY GOODS,
REGALIA FOR ALL ORDERS.
FLAGS, BANNERS,
TRIMMINGS, ETC.
D. NORCROSS,
MASONIC TEMPLE, SAN FRANCISCO.

HEUSTON, HASTINGS & CO.,
THE LARGEST CLOTHING HOUSE

ON THE PACIFIC COAST. See Advertisement on outside cover.

HODGE & WOOD, Wholesale Stationers, 418 & 420 Clay St., S. F.

THE SILVER CITY DIRECTORY

FOR THE

YEAR COMMENCING MAY, 1864.

Abbreviations.

bds., boards. n., north. s., south. nr., near. res., reside. op., opposite.
 ad., advertisements.

A

Adkins J. W. blacksmith Pride of West Mine
 Adler M. grocer Main. op Eastern Slope Hotel
 Albert John, laborer Phoenix Mill
 Alder & Co. grocers and clothing store, Main
 Allen E. E. mason, Main
 Allen Thos. amalgamator Sacramento Mill
 Allen E. B. wagon-maker Main
 Ames D. J. blacksmith with Horstep, Main
 ANGEL J. I. prop'r Eastern Slope Hotel, Main
 ARCADE SALOON, Hall & Noyes, (see ad)
 ARMSTRONG, ROBERTS & HOWARD, prop'rs Devil's Gate
 Toll Road
 Armstrong Wm. prop'r Devil's Gate Toll Road, res at Gate
 Arnold Wm. amalgamator Phoenix Mill

B

Bainar M. with Conrad Weigenstine, Main
 Baker J. H. musician, Main
 Baker J. H. prop'r Occidental Saloon, Main
 Baldwin J. B. amalgamator Sacramento Mill
 Bankheiser P. laborer Eastern Slope Mill
 Barber S. T. carpenter and contractor, res Main
 BARNEY, McDUFFIE & CO. grocers, Main
 BARNEY J. K. of Barney, McDuffie & Co
 Barrett Thos
 Bartlett C. P. druggist, office in Post Office

Dealers in School Books and Cheap Publications.


9108000V

Reed & Wade's quartz mill, situated at American City, was built in 1861 by Smith, Wade & Co., runs four batteries of two stamps each, making eight stamps in all, which reduces about eight tons of quartz in twenty-four hours; it has six amalgamating tubs, two Hepburn pans, and one agitator. The mill is run by an engine of 20-horse power, and crush custom rock, superintended by the proprietors.



Rigby & Co.'s quartz mill, situated on American Flat, was erected in 1862, owned by Rigby Bros., Brewster & Breet; runs two batteries of five stamps each, making ten stamps, which reduces about fourteen tons of quartz in twenty-four hours; has five Varney amalgamating pans, and four settling tubs, driven by a steam engine of 30-horse power, crushes custom rock. This mill has a prospecting pan for working small lots of ore, also an assaying and smelting apparatus. The boiler is of Nevada manufacture, having been made by the Pioneer Boiler Works in Lower Gold Hill. This company were fortunate in securing such an excellent natural site for the location of their mill and works.

PIONEER LAUNDRY, CEDAR RAVINE,

Office at Virginia Hotel, cor. Sutton Avenue and B Sts.,
VIRGINIA CITY, N. P.

 This Establishment being the oldest and largest in the City, situated free from dust, and having a good quality of water, is now prepared to give to its patrons a superior style of work.

Wagons Run Daily to Receive and Deliver Washing.
ORDINARY MENDING AND BUTTONS SEWED ON
FREE OF CHARGE!

 Orders attended to and satisfaction guaranteed. 

MARK THE DIFFERENCE BETWEEN
"PIONEER" and "PIONEER STEAM LAUNDRY."

HODGE & WOOD, Wholesale Stationers, 418 & 420 Clay St., S. F.,

THE AMERICAN CITY DIRECTORY

FOR THE

YEAR COMMENCING MAY, 1864.

Abbreviations.

bds..boards. n..north. s..south. nr..near. res..reside. op..opposite.
ad..advertisements.

A

Adams J. H. prop'r American City Stage Line
AMERICAN CITY STAGE CO. runs bet Virginia and American City
AMERICAN CITY HOTEL, Wm. Fawcett, (see ad)
Anderson G. G. miner, bds American City Hotel
Armstrong J. miner, bds American City Hotel

B

Bacon Frank, miner, bds American City Hotel
Baker J. W. carpenter
Bath Joseph, F. butcher
Beltier M. blacksmith nr Toll House
Berk John, blacksmith
Bodwell J. D. carpenter
Hogar C. S. amalgamator Reed's Quartz Mill
BOOHINGER & ORTH, grocers (see ad)
BOOHINGER M. grocer, of Boohinger & Orth
BOOTHERTON J. R. prop'r American City Store, (see ad)
Boyden Wm. miner, bds at Strother's
Brett J. R. of Rigby & Co's Mill, res San Francisco
Brewster Calvin, prop'r Russ House
Brewster S. T. of Rigby & Co's Mill
Brown James, Feeder Reed's Mill
BROWN S. H. prop'r Brown's Lumber Yard, nr Washoe Toll House, (see ad)

Blank Books of all Descriptions Made to Order.

ANNUAL REPORT
1866

OF THE

STATE MINERALOGIST

OF THE

STATE OF NEVADA

FOR 1866.

CARSON CITY:
JOSEPH E. ECKLEY, STATE PRINTER.



List of Mills in Nevada.

NAME.	Motive Power.	Cords of Wood pr Day.	No. of Stamps.	Weight of Stamps.	No. of Pans.	Nature of Pans.	Crushing Capacity per Day. Tons.	REMARKS.
STOREY COUNTY.								
Atlas.....	steam	4½	15	600	8	Hepburn	25	Refitting.
Atwood.....	"	4½	16		26-2	Knox, Wheeler	20	
Bay State.....	"	6	23		14	Wheeler	35	
Bower's.....	"	4	20	10-600 10-700	30	Knox	25	
Central.....	"	8	13		4	Hepburn	12	
Crown Point.....	"	5	8	500	8	Knox	8	
Comet.....	"	4½	16				20	
Douglas.....	"	4	10	650	26	Plain	16	
Eclipse.....	"	4	15		8	Hepburn	25	
Empire, No. 1.....	"	5½	21	650	29		30	
Empire, No. 2.....	"	8	16	650	12	Wheeler	32	
Empire State.....	"	5	15		20-2-2	Knox, Wheeler, Hepburn	15	
Gold Hill.....	"	3	14	8-600 6-750	24	Knox	17	
Granite.....	"							
Gould & Curry.....	"	20	80		39-3	Hepburn, Varney	100	
Hoosier State.....	"	3½	8	750	24	Knox	12	
Imperial.....	"	6	44	600	74	Knox		
Land's.....	"	5½	20		10	Wheeler	30	
Mariposa.....	"	4	12		2-6	Knox, Wheeler	15	
Marysville.....	"	5	9		30	Plain	18	
Ogden.....	"	6	22		12	Wheeler	20	
Pacific.....	"	8	30	650	15	Wheeler	50	
Petaluma.....	"	3½	16	700	18	Knox	26	
Piute.....	"	5½	20	650	12	Hepburn	30	
Rhode Island.....	"	8	25	650	13-8	Knox, Hepburn	40	
Rigby's.....	"	4	10		5	Varney	12	
Rogers.....	"	3½	8				12	
Sapphire.....	"	5	16	750	56	Knox	28	
Simcoe.....	"	5	16		8	Tubs, Wheeler, Hepburn	25	
Stevenson's.....	"	2½	8	500	10	Knox	10	
Succor.....	"	6	20				26	

Summit.....	"	6	20	625	11-1	Wheeler, Varney	35
Union.....	"	2½	14	10-650 4-500	14		14
Winfield.....	"	5	18		8	Hepburn	30
LYON COUNTY.							
Birdsall & Carpenter...	water	2	30	650	20	Wheeler	55
Bacon.....	steam	6	20	650	17	Wheeler	30
Bartolo.....	"	3	8	550	8	Knox	9
Cole & Co.....	"	3	5	480	4	Wheeler	3
Devil's Gate.....	"	5	8	900	10	Hepburn	14
Daney.....	"	6	15	550	15	Wooden Tubs	20
Dayton, No. 1.....	water	1	20	500	6	Wheeler	20
Dayton, No. 2.....	steam	6	15	800	8	Varney	15
Eagle.....	water		5	400	2	Knox	15
Eastern Slope.....	steam	5½	16	800	6	Hepburn	20
Excelsior.....	"	3	10	650	18	Knox	18
Eureka.....	water		20	650	8	Wheeler	22
Franklin.....	"	4	10	600	8	Knox	12
Golden Eagle.....	steam	3½	10	850	25	Tubs	13
Illinois.....	"	5	20	400	5	Hepburn	20
Island.....	"	2	19	650	11	Tubs	14
Lindauer & Co.....	st'm & water	2½	15	480	10	Wheeler	20
Metallurgical Works...	steam	5	15	700	6	Wheeler	16
Monitor.....	water		5	450	2	Wheeler	3
New York & Nevada.....	steam	5½	20	550	17	Hepburn	25
Ophir.....	st'm & water	2½	24	600	15	Hepburn	35
Pioneer.....	steam	6	15	700	15	Tubs and Wheeler	20
Phoenix, No. 1.....	"	6	15	650	8	Tubs and Wheeler	19
Phoenix, No. 2.....	"	7	20	534	34	Tubs	28
Palmyra.....	"	4½	10	650	12	Tubs	15
Rock Point.....	st'm & water	2½	56	550	50	Tubs and 6 Hepburn	60
Sparrow & Trench.....	steam	6	20	600	19		25
Sherman & Co.....	water		5	400	2		4
Swansea.....	steam	5	14	900	22	Tubs	20
Smith, D. L.....	water		5	450	4	Tubs	4
Sacramento.....	steam	5	12	750	12	Tubs	18
San Francisco.....	st'm & water	3	10	650	7	4 Tubs and Wheeler	14
Weston & Co.....	steam	4	15	550	9	Wheeler	14
Weston & Co.....	water		10	450	8	Tubs	11

One of these Mills destroyed by fire during 1866.

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BIENNIAL REPORT
OF THE
STATE MINERALOGIST
OF THE
STATE OF NEVADA,
FOR
THE YEARS 1871 AND 1872.

12760

Mormon named Smith, but no work was done until the Fall of eighteen hundred and seventy-one. Several locations have been made in the district; and a considerable amount of work has been done on the Klingensmith. This vein is from two and a half to three feet in width. An incline has been sunk on it seventy-five feet. The ore is low grade, and averages about forty-five dollars per ton without assorting. The vein is in quartzite—a large belt of which runs through the district east to west. The principal formation found here is granite. Water is obtained from springs, though it is but a short distance to the Meadow Valley Wash, in which flows a good stream of water at all seasons of the year. Sherwood's sawmill is ten miles distant, where plenty of lumber can always be obtained.

CHIEF DISTRICT

Is situated twelve miles south of Pioche, and three miles from Meadow Valley to the west. Several locations have been made, and work commenced on the Black Hawk ledge, by Messrs. Raymond & Co. The ore extracted is estimated to be worth one hundred dollars per ton. A number of miners are at work here, and the prospects are fair for a good camp.

LYON COUNTY.

A number of mining districts have been organized in this county at various times, and a great amount of money has been expended in them, in the endeavor to develop some profitable mines; but with the exception of some veins in Gold Cañon, none of the mines in this county are yielding any ore. Being favorably situated for the erection of mills for the reduction of Comstock ores, and having the Carson River as a motive power for the propulsion of machinery, this county is the great milling center of the State. The mills now in running order have the capacity of working daily one thousand three hundred and ninety-nine tons of ores and tailings—which is much larger than that of any other county in the State.

DAYTON,

The county seat, situated on the banks of the Carson, has a population of about one thousand five hundred. Silver City, in Gold Cañon, has about the same population. Sutro, three and one half miles below Dayton, at the mouth of the tunnel, is being rapidly built up. It is regularly laid out, the streets crossing each other at right angles. The main street is one hundred and fifty feet in width, and those parallel with and crossing it are one hundred feet wide. A water tank that will contain fifty thousand gallons has been constructed two hundred and fifty feet above the town. It is filled from a water tunnel run in the hill about one mile above, between No. 1 and No. 2 shafts.

Sutro Building Association has been formed among the mechanics and employes of the tunnel company, with a capital stock of fifty thousand dollars. A Masonic and Odd Fellows' hall will be built by this society

during the present Winter. It is to be built of brick manufactured in the vicinity, which are said to be of a very superior quality. A Post Office and Wells, Fargo & Co.'s Express are here, and a telegraph line by the way of Dayton connects it with the lines of the Western Union Telegraph Company. Gas works have been erected, by which the town and tunnel are lighted. Sutro is six miles from Virginia, with which place it is connected by a good road across the mountains. One of the finest private residences in the State has been built here, at a cost of over forty thousand dollars, by Mr. Sutro, President of the tunnel company.

SUTRO TUNNEL.

Many reports have been made upon this enterprise, setting forth its magnitude, advantages, its bearing upon mining, and especially the difficulties against which Mr. Sutro has had to contend from the opposition of the mine owners. All the facts connected with this undertaking are so well known that it will be unnecessary to repeat them here, or to enter into any discussion as to the merits or demerits of this great undertaking. Mention only of the progress of the work and the activity with which it is carried forward, will be made. The tunnel has now reached the distance of three thousand three hundred feet, and is being carried in at the rate of three and one half feet per day. Two thousand three hundred feet from its mouth it is cut by an air shaft two hundred and ten feet from the surface. The dirt from the face of the tunnel is hoisted through this shaft, instead of being carried out to its mouth. For a distance of one thousand feet the tunnel has been completed. It is well timbered and divided into two compartments. The supports on the sides are timbers twelve by twelve inches, and in the center ten by ten inches. Each compartment is five feet wide at the bottom, four and one half at the top, and seven and one half feet high. A railroad track is laid as fast as the tunnel advances. This will extend to the river, a distance of one and a half miles. The floor and track are raised sixteen inches to allow a passage for the water. There is a fall of one inch to every one hundred feet. This, it is thought, will be sufficient to carry off the water.

Shaft No. 1 is four thousand and seventy feet from the mouth of the tunnel. It has reached a depth of four hundred and eighty feet, and will soon be completed to the tunnel level—five hundred and forty-three feet. Shaft No. 2 has reached a depth of six hundred feet. It is five thousand one hundred and fifty feet from No. 1, and at the level of the tunnel will be one thousand feet deep. Shaft No. 3 is four thousand feet from No. 2, and is four hundred feet deep. At the level of the tunnel its depth will be one thousand four hundred and fifty-eight feet. Shaft No. 4 is four thousand six hundred and fifty-four feet from No. 3. It has been sunk four hundred feet. At the level of the tunnel it will be one thousand four hundred and ninety-eight feet deep. The distance from the Savage Mine on the Comstock lode is two thousand two hundred and forty-four feet, and the whole distance from the mouth of the tunnel, twenty thousand one hundred and seventy-eight feet. At this point the depth of the tunnel below the floor of the Savage works will be one thousand nine hundred and twenty-two feet. The topography of the country is well adapted to the sinking of these shafts, being cut by deep ravines, in which the different shafts have been started. If the slope of the hill from the mouth of the tunnel to Virginia were regular, it would

be necessary to sink several hundred feet further to obtain the same level. Powerful hoisting works have been erected at each one of the shafts. In No. 2 a large amount of water has been encountered. When the pumps are allowed to stop it rises to within three hundred feet of the surface. A large machine shop has been erected at Sutro for the manufacture of all the machinery to be used by the company. There is also here a store supplied with everything necessary for use at the different works. These are issued as they are needed. The formations through which the tunnel has passed so far, are: for the first seven hundred and fifty feet, conglomerate; then trachyte three hundred and eighty feet; after this a belt of clay one hundred and fifty feet; and then comes one thousand seven hundred and fifty feet of porphyry; again three hundred and ten feet of trachyte. It is calculated that the tunnel will be completed to the Comstock lode in from two to two and a half years from the present time, providing no unlooked for obstacles are met with in the prosecution of the work.

MILLS.

The following list of quartz and tailing mills was made by Mr. George McFadden, County Assessor:

Name.	Situation.	Capacity, tons.	Stamps.	Condition.
Devil's Gate.....	Silver City.....	24	12	running
Pioneer	Silver City.....	30	15	running
Bacon	Silver City.....	40	20	running
Trench	Silver City.....	40	20	running
Horn	Silver City.....	20	10	running
Kelsey.....	Silver City.....	30	15	running
Golden Age.....	Silver City.....	10	5	running
Hope	Silver City.....	20	10	running
Excelsior.....	Gold Cañon.....	20	10	running
Sacramento	Gold Cañon.....	25	12	idle
Swansea.....	Gold Cañon.....	25	12	idle
Atlanta	Gold Cañon.....	20	10	running
Keystone	Gold Cañon.....	30	Tailings.	running
Eureka	Carson River...	120	60	running
Franklin	Carson River...	40	20	running
Woodworth	Carson River...	48	24	running
Island.....	Carson River...	20	10	idle
Carson Valley	Carson River...	300	Tailings.	running
Desert	Carson River...	25	Tailings.	running
Birdsall & Co.....	Dayton.....	300	Tailings.	running
Reservoir.....	Dayton.....	50	Tailings.	running
Rock Point.....	Dayton.....	112	56	idle
Spring Valley.....	Spring Valley...	20	10	running
Daney	Spring Valley...	30	15	idle

A008442

DEVIL'S GATE DISTRICT

Is situated in Gold Cañon. Silver City is about its central point. The mines here were worked several years ago, but for a long time they were idle, and some of them abandoned. Work, however, has been resumed here lately, and the prospects of this district never looked more encouraging than the present.

DAYTON.

This mine is located in Silver City, on the south side of the cañon. The old works on this mine are a tunnel, in which a shaft was sunk two hundred feet. A new shaft has been started, which has reached a depth of one hundred feet. New steam hoisting works are to be erected over it in the Spring. Ore from this mine is extracted in sufficient quantities to keep the Atlanta Mill—ten stamps—constantly running. This is one of the earliest locations in the district. Nothing was done on it for a number of years. During the past Summer work was resumed—the old works cleaned out, and a new shaft commenced.

BUCKEYE.

This mine is located one mile east of Silver City, in Long's Ravine. It is also one of the old locations. Steam hoisting works have been in use here, but everything was abandoned, and nothing done for a long time. Two years ago work was resumed, and new steam hoisting works were erected. An incline is down a distance of six hundred feet. Two mills, Horn and Hope, each ten-stamp, are supplied with ore from this mine. Water in considerable quantities is found, requiring an eight-inch pump to keep the mine clear. This water is carried by flumes around to Silver City, and supplies the Bacon and Trench Mills.

COOK & GEYER.

This mine is located about three quarters of a mile north of Silver City. A great amount of work was done on it last Summer, and the ore obtained here kept the Franklin Mill running. It has been idle for the last three months, but work will soon be resumed again.

DANEY.

This mine has been abandoned. Some good ore was here near the surface, and worked out years ago. Since that time hundreds of thousands of dollars have been expended in prospecting for other bodies of ore, but nothing of any consequence has been found. Work has been stopped and renewed again several times. During the excitement of last Spring the owners were again inspired with the hope of finding something in this mine, but after several months of work they have given it up and will remove the hoisting works and other material of value.

12760

MILLS.

I am indebted to Mr. Samuel Donke, of Virginia City, who has kindly prepared the following tabular statement of the mills in Storey County:

Name of Mill.	No. of Stamps.	No. tons per day.	Location.	Crushing Ore, from.
Boston	5	.....	Gold Cañon.....	..... Empire, Gold Hill
Ione	5	15	Gold Cañon.....	..... Crown Point Croppings
Succor	15	25	Gold Cañon.....	..... Idle
Ramsdale	2	5	Gold Cañon.....	..... Woodside
Pacific	30	70	Gold Cañon.....	..... Belcher
Pappoose.....	5	14	Gold Cañon.....	..... Gold Hill Croppings
Piute	20	50	Lower Gold Hill..	..... Idle
Douglas	15	30	Lower Gold Hill..	..... Empire, Gold Hill
Atlas	15	45	Lower Gold Hill..	..... Savage
Petaluma	24	75	Lower Gold Hill..	..... Crown Point
Sapphire	15	40	Lower Gold Hill..	..... Crown Point
Rhode Island.....	25	50	Lower Gold Hill..	..... Crown Point
Gold Hill Quartz.....	8	18	Lower Gold Hill..	..... Idle, out of wood
Sunderland.....	10	25	Lower Gold Hill..	..... Belcher
Hoosier State.....	18	40	Virginia .....	..... Savage
Sierra Nevada.....	20	50	Virginia .....	..... Sierra Nevada
Evans.....	5	13	7-Mile Cañon.....	..... Savage
Mariposa.....	12	30	7-Mile Cañon.....	..... Hale & Norcross
Sacramento & Meredith..	20	50	Cedar Hill .....	..... Idle
Winfield	20	50	7-Mile Cañon.....	..... Chollar
Atlantic.....	12	30	7-Mile Cañon.....	..... Idle
Landy.....	20	50	7-Mile Cañon.....	..... Chollar
De Lands	15	35	6-Mile Cañon.....	..... Idle
Nevada	20	50	Virginia .....	..... Chollar
Empire State.....	15	40	6-Mile Cañon.....	..... Idle
Park & Bowie, No. 1.....	.....	.....	6-Mile Cañon.....	..... Tailing Mill
Park & Bowie, No. 2.....	.....	.....	6-Mile Cañon.....	..... Tailing Mill
Occidental	20	50	Silver Star Dist..	..... Tailing Mill
Lady Bryan.....	10	.....	6-Mile Cañon.....	..... Idle
Total, 29 mills.....	399	1,001		

WASHOE COUNTY.

This county is north of Ormsby. It takes its name from a tribe of Indians who inhabit the western portion of the State. A few mining districts have been organized within its boundaries, at different times, but none of them have ever been a source of much profit. The wealth of this county consists chiefly in its agricultural resources and timber lands. Formerly, the streams of water flowing from the cañons in the Sierras into Washoe Valley were made available for milling purposes, in reducing the ores from the Comstock; and at one time no less than ten mills, having an aggregate of two hundred and eighty-one stamps, were in active operation in this county—some of these, moreover, were of the largest size, and first-class in all their appliances. The Ophir Company's Mill, of seventy stamps capacity, and built at a cost of a half million dollars, and Dall's Mill at Franktown, having sixty stamps, were among

the first mills in the State. Since the completion of the Truckee Railroad, however, ore can be delivered so much cheaper to the mills on the Carson River, that with the exception of the Truckee Mill, near Reno, and one or two tailing mills in Washoe Valley, nearly all these mills have been dismantled and abandoned.

RENO

Is the county seat, and is situated on the line of the Central Pacific Railroad. From this point all supplies used in the southwestern section of the State are forwarded, as well as to Douglas, Ormsby, Lyon, and Storey Counties. It is pleasantly located on the banks of the Truckee River, and has many natural advantages for maintaining itself as a prosperous town.

WADSWORTH

Is situated thirty-five miles further east, on the line of the railroad. There are located here the repair and machine shops for the Truckee division of the Central Pacific Railroad. From this point freight is shipped to Belmont, Ellsworth, and Columbus; and all the soda and borax obtained in Churchill and Esmeralda Counties are forwarded to this place for shipment to the markets.

WASHOE CITY,

Formerly the county seat, Ophir, and Franktown, since the decline of milling enterprises in this county, are not so flourishing as they were some years ago.

The following interesting description of the agricultural and other resources of this county has been condensed from the columns of the *Nevada State Journal*, a well edited weekly newspaper published at Reno:

It may be said that Washoe County embraces an area of one thousand five hundred square miles and that of this extent not less than from eight hundred to one thousand square miles will ultimately be found valuable for agricultural and grazing purposes. We think we are speaking within proper bounds of truth, for, in fact, it is difficult to say what noticeable portion of the entire county is not to a greater or less extent fit for grazing. Of the fine arable land (by which we mean land so situated, of proper richness, that crops may be raised by irrigation) we think that there are between three hundred and four hundred square miles. Notwithstanding the rather extensive reclamation and cultivation of lands in Washoe Valley and Truckee Meadows, we do not believe that one fourth of our arable lands have been yet tested to anything like their reasonable capacity for farming operations. The surface of the county alternates in mountain range, valley, hill, and lake. The eastern range of the Sierra Nevada Mountains were ten years ago clothed from valley to summit with forests of excellent pine timber. Since then, great inroads have been made among these fine trees for the procuring of lumber, mining timber, and wood, but enough yet remains in the southwestern portion of the county to form an extensive source of supply for the same purposes, and all accessible to labor and capital. The extreme southwest corner of the county is found within the limits of the remarkable and beautiful Lake Tahoe,

✓ NEVADA:

THE

LAND OF SILVER.

BY

JOHN J. POWELL,

AUTHOR OF

"The Golden State and its Resources."

SAN FRANCISCO:

BACON & COMPANY, BOOK AND JOB PRINTERS,

Corner Clay and Sansome Streets.

1876.

STOREY COUNTY.

NAME.	LOCATION.	MOTIVE.	STAMPS.	TONS.
Boston	Gold Cañon ...	Steam	5	15
Ione	"	"	5	15
Succor	"	"	15	25
Ramsdale	"	"	2	5
Pacific	"	"	30	70
Pappoose	"	"	5	14
Piute	Lower Gold Hill	"	20	50
Douglas	"	"	15	30
Atlas	"	"	15	45
Petaluma	"	"	24	75
Sapphire	"	"	15	40
Rhode Island	"	"	25	50
Gold Hill Quartz	"	"	8	18
Sunderland	"	"	10	25
Hoosier State	Virginia	"	18	40
Sierra Nevada	"	"	20	50
Evans	Seven-mile Cañ.	"	5	13
Mariposa	"	"	12	30
Sacramento & Meredith	Cedar Hill	"	20	50
Winfield	Seven-mile Cañ.	"	20	50
Atlantic	"	"	12	30
Landy	"	"	20	50
De Lands	Six-mile Cañon.	"	15	35
Nevada	Virginia	"	20	50
Empire State	Six-mile Cañon.	"	15	40
Park & Bowie No. 1 ..	"	"	..	..
Park & Bowie No. 2 ..	"	"	..	..
Occidental	Silver Star Dist.	"	20	50
Lady Bryan	Six-mile Cañon.	"	10	..

R. V. Dey

4010184

to
D. B. Harvey

Dec. 5, 1871

350.

to
A. B. Thompson

Mar. 1, 1872.

Parcel of Land - in Gold Hill - Storey County -
State of Nevada, described as follows:

All of Lot No. 15 - in Block No. 6 in Range 6
in the Town of Gold Hill - together with the mill
thereon - being known as the Marysville Mill
Company's property.

Marysville
Mill Property -
Lot 15 - Block 6
Range 6 -
Gold Hill

A. B. Thompson

to
C. C. Stevenson

Lease of
the above
Property
to May 14, 1876

July, 1876. Menu. The above Marysville Mill Property is
in the name of R. V. Dey.

Comstock Mining and Miners

by Eliot Lord



A reprint of the 1883 edition.

Appropriate illustrations have been added to augment the text.

With Introduction by
DAVID F. MYRICK

HOWELL-NORTH
Berkeley, California
1959

A008046

a forest twenty miles away. The distance was not great, but this lumber was cut on a mountain slope, hauled to a saw-mill overpressed with work though running night and day, and at length dragged up a rocky cañon to the site of the mill, where it was put together with nails brought on the backs of mules across the mountains. The cost of transportation from San Francisco to the mill far exceeded the original cost of the machinery, ranging from 13 to 25 cents per pound. Lumber was \$60 per M at the saw-mill, and this price was more than doubled by the added charge for delivery at Gold Cañon. These extraordinary expenses did not delay the work of construction, for the mill must be completed at any price within the allotted time. So rapidly did Paul and his men carry on the task that the first steam-whistle heard on the eastern slope of the Sierras was blown by his engineer, William H. Baker, on the 9th of August, and the 24-battery stamps of his mill began to crush ore on the 11th of the same month, the last day allowed for the fulfillment of his contract.¹

Toward the close of the work he had been pressed hard by two other enterprising mill owners, Charles S. Coover and Elias B. Harris, who exerted themselves in friendly competition to gain the honor of erecting the first mill in the district.² Their mill was a smaller one, containing one battery of eight stamps only, but their machinery was ordered later, June 21, 1860, and the contest for precedence was so close that their machinery was set in motion three hours after Paul's mill began work.³

These two mills were thus completed, but the question of their serviceability was yet unanswered. The first ore worked was five tons of tailings, refuse rock previously discarded by men who had attempted to reduce it in arastras and rockers, from the claim of Rice & Co., on Gold Hill, a portion of the 50 feet located by James Finney. The mortar or bed of the battery was surrounded by a wire bolting-cloth, through which the ore

¹Almarin B. Paul; Virginia City Territorial Enterprise, August 11, 1860. William H. Howland, San Francisco, Cal.; Comstock Papers, No. 15; Mining and Scientific Press, February 3, 1877.

²In October, 1859, a small frame battery of four stamps had been placed on the Carson River, near the foot of Gold Cañon, by two Californians, Hugh Logan and J. P. Holmes. The stamps were lifted by horse-power and crushed ore until the work was stopped by storms, for there was no mill building or shelter over the battery. This was unquestionably the first stamp battery brought across the Sierras, but it could only be called a mill by courtesy. (J. R. Logan, brother of Hugh Logan, and several old residents of Dayton, Nevada. The Big Bonanza, p. 69. Nevada Directory, 1863, J. W. Kelly, compiler.)

³Wm. H. Howland; testimony under oath; Sacramento Union, August 15, 1860.

crushed dry was dashed in a misty cloud by the fall of the stamps, dropping on a platform outside. Here the powder was dampened sufficiently to admit of its removal in shovels to the pans, where it was mixed with water and mercury, and the pulp thus formed was ground by the revolving mullers.¹ Each pan held about 300 pounds of ore and 40 pounds of mercury, and with each charge a pint of salt and a few ounces of copper filings or sulphate of copper were used.² Water was conducted to the pans by pipes leading from a tank heated slightly by the exhaust steam from the driving-engine. The copper cross-boards in the pans were scraped twice a day, and the amalgam collecting at the bottom of the pan was drawn off at intervals through a discharge hole. When a sufficient quantity was thus obtained it was strained through a buckskin bag until the liquid mercury was pressed out and a pasty mass was left in the bag ready for retorting. Placed in a closed iron vessel over a fire this paste was steadily heated until the remaining mercury passed off in vapor through a pipe into a condensing chamber, where, upon cooling, it assumed its original metallic form. The bullion alloy of gold and silver remained in the retort.

This process was watched by Paul with natural anxiety. Failure had been so persistently predicted that his associates in the company had become disheartened, and he had resorted to entreaty, ridicule, and protest in order to induce them to hold to their contract. His pride and purse were alike staked on the issue of the trial. Accordingly, he awaited eagerly the report of the Virginia City assayers, Ruhling & Co. The five tons yielded \$84.56 (gold, .954 fine, valued at \$63.63; silver, .810 fine valued at \$20.93,) or an average return of \$16.91 per ton. This product from refuse ore was accounted satisfactory, and he proceeded to crush and reduce ten tons of average rock from the same claim, which yielded in gold \$387.02 and in silver \$163.97—in all \$550.99, or \$55.07 per ton.

Interest in the work was then awakened throughout the camp. The Lucerne Company desired a test, and ten tons of selected quartz from their ledge produced \$1,427.91, or \$142.79 per ton. Joseph Plato sent

¹J. W. Simonton, Corresponding Editor San Francisco Bulletin, September 20, 1860.

²Almarin B. Paul, San Francisco, Cal.

to make over their property to the Bank of California in default of payment. The bank would undoubtedly have been willing to extend its accommodation to any reasonable point, as the mills while standing idle were simply a burden upon the corporation; but the mill-owners, in view of the uncertain prospect of obtaining ore enough for their needs, preferred to make an assignment of their mills rather than incur the accumulation of debt which threatened them. No property deteriorates more rapidly in value than mill property when in disuse. The expense of a watchman and the accumulating taxes and insurance dues must be paid. The heavy machinery, the pans, shoes, and dies require constant attention to keep them in good order; for if left without care they will rapidly rust and become unserviceable. The very framework of the mill, even, being frequently made of poorly seasoned or unfit stuff, will crack and warp if neglected, so that in a short time it must be extensively repaired or replaced. If, furthermore, the supply of ore should totally fail, the mill would become practically worthless no matter how complete and serviceable its machinery might be. Thus, in the White Pine mining district, a mill in perfect order which had cost \$200,000 was offered for sale at \$5,000¹ without finding a purchaser; and Mr. Sharon sold a mill near the Comstock Lode which had cost him \$60,000 for one-twentieth of that sum.²

The advances made by Sharon were amply covered by the estimated value of the mills while actively employed in filling profitable contracts; but when supplies of ore failed the bank was obliged to take possession of mill after mill in order to avoid the certain loss of a forced sale by auction. The first mill so acquired was the Swansea Mill, in Lyon County, in May, 1866,³ and twelve months later seven mills were held by this corporation. The bank then considered it advisable to make some disposal of the property which had come into their hands; and upon Mr. Sharon's clear representation of the case it was determined by a number of the principal stockholders in the bank to organize a corporation, to be known as the Union Mill and Mining Company, who should purchase and manage the mill property held by the bank. This organization was effected in June, 1867, the charter members being D. O. Mills, William Sharon, Alvinza

¹ Alpheus Bull, Trustee.² William A. Sharon.³ I. L. Requa.

BRITTON & CO.

Lithographers.



Montgomery St. cor. Commercial
SAN FRANCISCO.

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CONTAINING:

THE NAMES OF RESIDENTS IN THE
PRINCIPAL TOWNS; A HISTORICAL SKETCH;
THE ORGANIC ACT, AND OTHER POLITICAL MATTERS
OF INTEREST; TOGETHER WITH A DESCRIPTION
OF ALL THE QUARTZ MILLS; REDUCTION WORKS,
AND ALL OTHER INDUSTRIAL ESTABLISHMENTS
IN THE TERRITORY; AS ALSO OF THE LEADING
MINING CLAIMS; AND VARIOUS MINERAL DISCOVERIES,
WORKS OF INTERNAL IMPROVEMENTS, ETC.,
WITH A TABLE OF DISTANCES, LIST OF PUBLIC OFFICERS,
AND OTHER USEFUL INFORMATION.

COMPILED FROM THE MOST RECENT
AND AUTHENTIC SOURCES;
by J. WELLS KELLY

AND INCLUDING
SKETCHES OF THE WASHOE
SILVER MINES
by HENRY DE GROOT

Nevada
Coll.

INTRODUCTION
by RICHARD LINGENFELTER

THE TALISMAN PRESS
Los Gatos, California 1962

about fifteen tons of rock per day. Use in the amalgamating department the improved Hungarian pans. Their dam and flume are substantial structures, and were built at a heavy expense. The mill is under the superintendence of L. J. Carr.

THE MINERAL RAPIDS MILL—located on the west bank of Carson River, a few rods from the Dayton Mill, and owned by Colton & Smith, is driven by a forty horse power steam-engine, from the Vulcan Foundry, San Francisco. It runs ten stamps and four twelve foot arrastras, crushing twenty tons of rock per day. The Hungarian pans are used in working for gold, and Johnson's method, for saving the silver. The proprietors do custom work and purchase ores.

THE ROCK POINT MILL—situated on the west bank of the river, one fourth of a mile below Dayton—is owned by Hugh Logan, J. R. Logan, James P. Holmes, and John Black. It is driven by water, and is one of the most extensive establishments in the country, the main building being ninety feet by one hundred feet, and the power equal to one hundred horses. It has forty stamps for fine, and two large ones for coarse crushing, and is capable of reducing fifty tons of rock per day, working it for both gold and silver. Thirty hands are employed, and in the amalgamating department sixteen of Varney's and thirty-two of Howland's pans are used. The tailings from these are subjected to the Patio process. The machinery is from the Miners' Foundry, San Francisco. The water is brought a distance of two thousand feet, nine hundred of which is through a flume ten feet wide and three feet deep. The dam is built of stone and timber, and with the race cost over ten thousand dollars. The entire cost of the establishment will be about seventy-five thousand dollars. The wheel is a ponderous structure, being sixteen feet in diameter, twelve feet breast, and furnished with forty buckets, which when full carry a weight of six thousand pounds. The mill crushes rock from the Logan & Holmes Claim, at Gold Hill, one of the best in that locality. The proprietors have constructed a new road for hauling down rock, which, besides shortening the dis-

tance over a mile, secures a better grade than the old route. Superintendents, Logan and Black. Builder, John Greentree.

FREEBORN & SHELDON'S MILL, formerly Shaw's, is situated on the east side of Carson River, three quarters of a mile below Dayton. The entire establishment is on a large scale, the building being seventy-five feet square, and the machinery driven by a Turbine wheel five feet in diameter, and weighing five thousand pounds, the heaviest of the kind in the country. The machinery is from the Vulcan Foundry, San Francisco. The mill, when run to its full capacity, will operate forty-eight stamps, twenty-four now being in use. The Norton pan and process are employed for amalgamating. The owners purchase their rock, employ fifteen hands, and crush about thirty tons per day. The ditch and tail-race are three quarters of a mile long, and cost six thousand dollars. The entire cost of the work will be about forty thousand dollars. William Freeborn and Mark Sheldon, owners; J. S. Akin, superintendent.

GAUTIER'S MILL, situated below Shaw's, on the same side of the river, is driven by water conducted through an expensive ditch nearly a mile long. It employs eight hands, and runs ten stamps, crushing fifteen tons of rock per day. Process is a new invention by Dr. Gautier, who superintends the mill. Owners, H. V. McCullough and L. P. Gautier.

THE SUCCOR MILL, one and a half miles below Dayton, on the west bank of Carson River, is driven by a six foot central discharge water-wheel, which carries fifteen stamps, capable of crushing twenty tons of rock per day. The building is sixty feet square, and very substantial. The water is brought the distance of half a mile through a ditch thirty feet wide. The company crush rock from their own lead—the Succor—on Gold Cañon, half a mile above Devil's Gate; employ twelve hands, and use Varney's pans for amalgamating. Mill superintended by J. B. Moore; owned by George Stead, Benjamin Ober, J. R. H. Waller, J. H. Moore, Henry Durant, Mr. Hobart, and Elliot J. Moore.

MINING AND SCIENTIFIC PRESS

An Illustrated Journal of Mining, Popular Science and General News.

BY DEWEY & CO.,
Patent Solicitors.

SAN FRANCISCO, SATURDAY, FEBRUARY 10, 1877.

VOLUME XXIV.
Number 6.

Comstock Papers.—No. 16.

Pan Amalgamation, and What It Led To.
The trial of pan amalgamation having proved a success, demonstrating the facility and cheapness with which the Comstock ores could be worked, confidence in the value of the mines was greatly increased, and many parties were encouraged to put up reduction works who would not otherwise have gone into the business. The popular idea that a vast deal of science, or at least much practical skill, was indispensable in the treatment of argentiferous ores having been thus partially dissipated, the California millmen were quite certain that they could deal with them successfully when a method so similar to that employed in reducing the gold-bearing quartz of this State would answer the purpose. Accordingly a good many of this class repaired to Washoe during the summer and fall of 1860, with a view to putting up mills and running them on this new school of ores. The arsenates that had been set up the year before were designed merely for working the quartz found at Gold Hill, in which the most of the gold was free and easily separated, no effort having been made to save the silver which it contained; the miners not then suspecting, in fact, that it carried any of this metal. When the sulphurated silver ores of the Comstock proper came to be handled, this style of apparatus was found to be wholly inadequate; hence early recourse to more effectual methods became necessary.

Era of Active Mill Construction

The completion in August, 1860, and the successful operations of the Paul and the Coover mills, was immediately followed by the inauguration of numerous other enterprises of this kind, several having, in reality, been planned prior to the above date and in anticipation of the success that it was expected would attend these pioneer establishments. So rapidly, indeed, did this business of mill construction thereafter proceed, that no less than 86 works of this description, carrying a total of 1,200 stamps, and costing an aggregate of over six million dollars, had been finished and started up by the end of 1861, some 40 or 50 arsenates and several pyritic sands built and set at work meantime, not being included in this estimate. Work upon a good many other mills had also been commenced before the end of that year, the most of which were completed early in 1862, when the era of most active mill construction terminated in so far as the Comstock mines were concerned, this industry having, for the next three or four years, been transferred to Esmeralda, Reese river, Pine Grove, Humboldt, and other interior districts.

Location, Cost and Capacity.

Of the mills built for reducing the Comstock ores eight, carrying 114 stamps and costing \$200,000, were located in Ormsby county; six, carrying 106 stamps, and costing \$1,200,000, were located in Washoe county; forty, carrying 573 stamps, and costing in the aggregate \$3,700,000, were located in Storey county; twenty-two, carrying 360 stamps, and costing \$1,000,000, were located in Lyon county, and ten, carrying 84, and costing \$300,000, were located in Esmeralda county, there having been erected, up to the end of 1861, not more than two or three small establishments of this kind in any other portion of Nevada Territory.

The First Parties to Put Up Water-Driven Machinery.

East of the Sierra, for the purpose of ore reduction, were Judge James Walsh and his partner, Joseph Woodworth, who, on their first visit to Washoe, in the latter part of June, 1860, threw a slight dam across the Carson river, at a point about one mile above the present town of Dayton, then Chinatown, and, diverting the water into a side race, employed it for propelling a couple of arsenates, which they constructed and put up there for testing the Gold Hill ores, they having bought from Comstock a small claim at that point before purchasing the silver bearing deposit a mile further north, and which afterwards constituted the site of the great Washoe discovery. The water right so secured on the river was, the

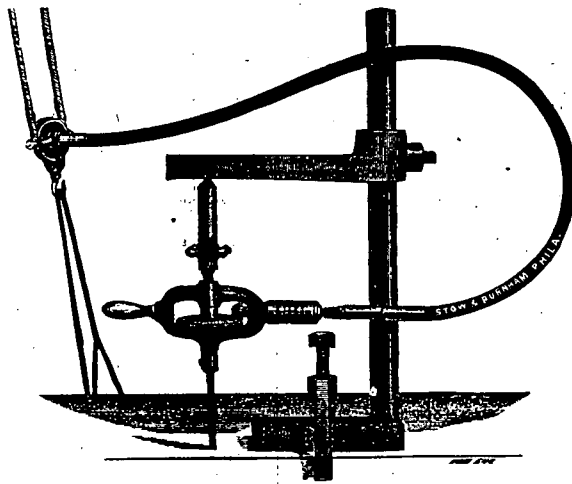
next year, further utilized by the construction there of additional arsenates and, finally, by the erection of extensive reduction works, this now being the site of the present Ophir company's large and efficient mill.

Besides Paul, Coover and Harris, the following parties commenced the erection of mills, and, in some cases, completed and had them running before the end of 1860: Richard Ogden and J. Downes Wilson, who, in November, 1860, finished the Ogden & Wilson mill, the first one completed in the Virginia City district; Henry O. Biandel, Alpheus Staples, Israel W. Knox, who built the Olive Branch mill, Flowery district; McNulty, who built what was afterwards known as the Bacon mill; Peter Frothingham, who put up a small establishment on Carson river, four miles below Dayton; John B. Winters, connected with Woodworth & Mosheim in the building of the Carson River mill; John Atchison, Logan and Holmes, whose works were also on Carson river; Trench & Sparrow; De Land, Eclipse mill; and various other persons, whose names we cannot now recall to memory. Among the mills that were begun this year and completed near the end of it or early in 1861, was that of the Spanish

Flexible Power Transmitter.

This is a very simple and useful device, as the accompanying illustration will show. It is the first successful application of a flexible shaft for general purposes of transmission of power. The *Polytechnic Review*, during the late exhibition, thus described this piece of mechanism: "Passing along the north avenue of machinery hall, our attention was attracted to what appeared to be a section of inch leather hose, with a revolving twist drill for a nozzle, the hose lying quietly on the floor and the drill or nozzle making a clean, smooth hole through a chilled cast wheel already perforated several times by the same means."

Following the "hose" backward and around a corner it was seen to terminate in the arbor of a rapidly revolving grooved pulley fastened temporarily to the floor and driven by a braided round leather belt, which after several corner turnings is seen to be driven by a grooved pulley high overhead. The mystery was explained.



THE STOW FLEXIBLE POWER TRANSMITTER.

company, at Virginia City; the Aurora, Keller, Dayton, the Sprout and several other mills on Carson river, besides a number of small establishments along Gold canyon, one or two about Virginia City and several along Six-Hills canyon, in the Flowery district. In the next number of these papers something will be said about the Ophir, Gould & Curry and other extensive works put up in 1861-2 at an enormous expenditure of money, but which, after a few years, ceased operations and were finally dismantled, with some remarks upon the causes that led to these disastrous results.

REAR-ADMIRAL JAMES ALDEN died in this city on Tuesday last. Admiral Alden took part in the Mexican war, and was present at the capture of Vera Cruz and Tobacco. He commanded the *South Carolina* in 1861, the *Rickmond* in 1862, and was at the engagement with Forts St. Philip and Jackson, and at the capture of New Orleans. In 1869 he was made Chief of the Bureau of Navigation.

The stagnation of certain manufacturing interests is indicated with terrible distinctness at Newark, N. J., where one-eighth of the population is dependent upon public charity.

One hundred and three deaths from small-pox were reported in London last week, the largest number during the present epidemic, except in the first week of January.

Whip-Making and the Effects of Steady Employment.

Simple as it appears, a first-class linen-plaited whalebone whip is constructed in an exceedingly interesting and ingenious manner, and it requires careful and honest management to uniformly produce a perfect and durable article. The stock for manufacturing must be judiciously chosen and the liquid or sticking material correctly compounded and applied in proper condition. The American Whip Company, of Westfield, Mass., well known in the trade in all American cities, is undoubtedly the largest factory in the world. In no other establishment is so large a variety of whips made in such perfection and great numbers.

Thirty years ago, says Mr. H. J. Bush (one of the leading founders of this company), a knife and plane were all the tools employed by a journeyman whip-maker. Now, we should judge that \$50,000 would not pay for the improved tools and machinery in this single establishment. The most ingenious in construction and operation is the plaiting machinery with its domes of wheels revolving and carrying different strands of thread in an amazing number of different ways, rapidly forming perfect fitting braid to the varying surface of the whip-stock. One of the latest invented machines plaits the bottoms on the stocks more evenly than, and as perfect as, the human hand.

The American Whip Company occupy a large four-story brick building, employing from 40 to 50 men when in full operation. One hundred and fifty dozen or about 2,000 whips can be turned out daily. Although the largest, this factory is only one of many equally well-deserving factories in the vicinity.

Westfield, for more than a quarter of a century, has been noted as being headquarters for whip and cigar-making in the United States. During the past 10 years, this town has, from appearance, doubled in wealth if not in population. The braiding of horsehair and buckskin lashes, snaps, and the working of buttons, etc., on whips taken into the industrious homes of the villagers, has given the town a thriftiness rarely enjoyed of late years by their neighbors in other parts of New England. This exemplifies the great benefit to any community of having some light employment for women and children. Although the remuneration may be very low, such employment tells largely in its general results. Some such employment universal in California would produce a wonderful change in the happiness and prosperity of our people.

THE Centennial mine, Nevada county, has paid its first dividend, aggregating \$3,000. The *Foothill Tidings* says of the mine: "When it is remembered that the Centennial is a new mine—that only a few months ago the locators of the mine were going round town soliciting parties to take a little stock in it at nominal or 'bed-rock' rates, 'just to help it on its feet you know,'—and that it has paid its expenses from the word go, and pays now dividend number one, amounting to more than the whole mine was held at a few months ago, we have a realization of why people will continue to put money into these legitimate mining enterprises, even though they do not all pan out as soon and as well as the Centennial. Some of them do and the average will turn out as well as most commercial ventures, if only good judgment followed by good management, go with the investment."

A USEFUL DEVICE.—We received a curious little arrangement this week from C. H. Barrows, of Williamstown, Connecticut. It is a device to place on the edge of a cap to keep the mountaineer out of the tea or coffee, and is much self-adjustable, and by means of spring clips will fit any cup, tumbler, mug or bowl, and is really a useful thing for mountaineered gentlemen. It may be carried in the vest pocket, being made of very thin metal, nickel plated. The invention is a new one, and is just being introduced for sale.

A CALL has been issued for a meeting of the National Teachers' Association, to be held in Washington on the 1st, 2d and 3d of March. Subjects of interest to the cause of education have been arranged for discussion.

VOL 34

February 3, 1877.]

MINING AND SCIENTIFIC PRESS

73

Comstock Papers.—No. 15.

Pioneer Mills and Millmen.

Postponing, for the present, further reminiscences of the first claim locators on the Comstock lode, and their immediate successors, who together gave their names to most of the mines along it, we proceed to remark briefly upon the first efforts made in the way of developing these mines and providing reduction works for the proper treatment of their ore. As already stated, the earliest attempts at working the Comstock ore were made in the spring of '59 at Gold Hill, the means employed consisting of the common Mexican arrastra, some half-dozen of which were in use there before the rich ore deposit at Virginia City was discovered. During the following summer and autumn the number of arrastras here employed was largely increased, several having been started near the site of the new discovery, and also down on Carson river, these last being driven by water. In the spring of 1860 the Maldonado brothers, owners of the Mexican, or, as it was then called, the Spanish ground, erected extensive yards for working their ore by the patio process, there having, as yet, been no mills or other reduction works put up here for the treatment of the ore. Alvaro S. Paul and the introduction of the Washoe Pass.

In the month of March, 1860, Almarin R. Paul, an experienced quartz miner, and skillful metallurgist, of Nevada county, California, made a visit to the newly found silver mines of Washoe, and after carefully examining the character of the ore, became satisfied that amalgamation could be thoroughly and economically effected through the use of the iron pans already employed in the gold mines of California. This idea was rejected as absurd by the old school of metallurgists, all of whom contended for the use of the German barrel or the Mexican patio process, some even insisting that the ore here could be satisfactorily treated only by smelting.

So thoroughly, however, was Paul impressed with the adaptability of the pan process for this purpose, that he instituted a series of careful trials directed to test the matter, the results of which fully confirmed his previous opinion. Believing that he was right, he determined, that the mill which he had already concluded to put up in Washoe should be furnished with this and no other amalgamating apparatus. Having completed an organization styled the Washoe gold and silver mining company, No. 1, of which he was himself the moving spirit and almost sole director, Paul commenced on the 24th day of May, 1860, work on his new mill, which was located at a rugged pass on Gold Canyon, known as the Devil's Gate, this site having been chosen because of its convenience to water.

The First Two Mills and a Close Race for Precedence.

On the 7th day of June, Paul gave his order to Howland, Angell & King, of the Miners' Foundry, San Francisco, for the iron work of this mill, which was driven by steam and carried 24 stamps. This machinery, with all needed supplies, was shipped over the mountains during the summer at an average expense of about \$400 per ton, this being before any wagon roads had yet been constructed over the Sierra. As there was but a single saw mill then running in the country, the lumber required for this mill cost at the rate of about \$300 per M, labor and material of every kind being proportionately high. Notwithstanding these and other obstacles, the projector and manager of this new enterprise pushed it ahead with such activity and vigor that he had the pioneer mill of Utah Territory advanced so near to completion that steam was let on and machinery started up on the 11th day of August, 1860.

It was by a single point, however, that Paul gained this distinction for his mill, that of George E. Harris, situated at Gold Hill, two miles above, having gotten up steam and set its stamps in motion only an hour or two later on the same day, as appears by the certificate of W. M. Howland to that effect, he having acted as engineer for both of these establishments on that occasion. As this was only an eight-stamp mill, the labor and cost of its erection were proportionately less, though the iron work, turned out at the same foundry, was not ordered until two weeks later than in the case of Paul's mill, which latter cost about \$50,000.

Their Successful Career.

The two mills, though rude and unpretentious structures, compared with some of those soon after put up, had, nevertheless, a long and successful career, having made large earnings for the owners, while they served the mining public acceptably and well. Paul's first run was on Gold Hill ore, Alpheus Staples having given him a contract to work 4,000 tons, at the \$30 per ton, an arrangement that resulted to the mutual satisfaction and advantage of both parties. He had, as the first cause, however, to a contract from the Ophir and the Gould & Curry companies, but they declined to furnish him with ore, being timid about his proposed method of amalgamation. Before his mill had been running a week, however, he had engaged to work ore to the amount of nearly half a million dol-

lars, and so numerous were the applications thereafter, that he commenced, within three months, building near the town of Gold Hill another mill, which was to carry 64 stamps and cost \$150,000.

The First Clean-Up

Made by him, amounting to several thousand dollars, was carried in iron kettles to Rhulung's assay office in Virginia City, where its appearance after being retorted created quite a stir, this being the first bullion produced in the country. It had, moreover, been demonstrated that pan amalgamation, since known as the Washoe process, would answer in the treatment of these Comstock ore, a fact that gave a new impetus to mining and imparted additional value to "feet." It is worthy of note that the first at-

many of them to serve the purpose at that.

The Coover Mill

Also ran at first for the most part on Gold Hill ore, the proprietors, Charles S. Coover and Dr. E. B. Harris, having contracted with Pluto and Bowers to work their ore at \$25 per ton. The building occupied by this mill was a mere shed, composed of rough lumber, and no one in passing would have supposed it of much account. But the machinery was good, and it was run by a man who thoroughly understood and carefully attended to his business. Pass it at what hour you might and this mill was in motion, and so it continued for several years, giving the best of satisfaction to all who patronized it, while it enriched the owners. It afterwards passed into the hands of C. C. Stephen-

FIG. 1.

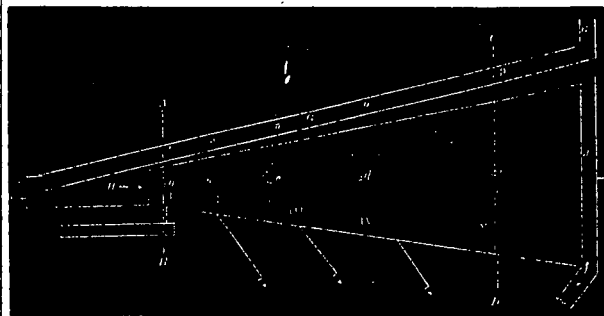


FIG. 2.

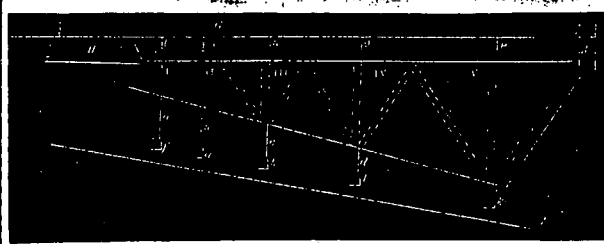


FIG. 3.

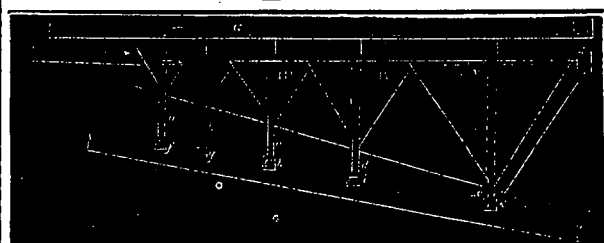


FIG. 4.



FIG. 5.



THE WENGLER ORE CLASSIFIER.

tempt at working the ore of the first silver mine ever found and opened in the country should have been attended with the inauguration of a process so distinguished for its efficiency and so essentially its own.

A Retort of Preposterous Dimensions.

Paul, entertaining a pretty high notion as to the richness of these Washoe ore, had taken over for use in his mill a retort of about 200 pounds capacity. This implement having been thrown out and for some days exposed to the public gaze, excited the jeers of passers-by, who tauntingly inquired of the over- sanguine mill builder if he expected to ever fill the thing with amalgam. The first clean-up having more than filled this retort, put an end to these jocular remarks upon its extravagant dimensions. The retorts now in use at the larger Washoe mills hold several tons each, and it takes a good-

son, who also made money with it, but standing close to the wagon track and proving to be quite in the main street of Gold Hill when it came to be widened and straightened, this venerable and useful structure was torn down and the machinery removed to eastern Nevada, where it was again set up and has since been pounding away as industriously as ever on the silver bearing ore of that region.

This ship Orient, now loading for New York, will carry a consignment of 4,000 bundles shingles and 50,000 feet redwood boards. This is a new outlet for our surplus lumber and its products.

J. R. Ford & Co., the well-known publishers, have gone into bankruptcy for the second time, having failed to carry out the terms of their first compromise with their creditors.

Mechanical Ore Concentration and Separation—No. 20.

(Copyrighted.)
(Written for the Press by FRANCIS M. F. CAMP, M. E., Santa Fe, New Mexico.)

Classification by screens will in practice act with success whenever the capacity of the screen is equal to the volume of ore fed into such screen. The capacity is not determined by the size of the screen alone, but by its rate of motion also, and therefore it is wise to provide screens and their driving shafts with cone pulleys, permitting the acceleration of their motion under greater requirement. Although screens made out of proper material, such as sheet copper and sheet steel, last longer than commonly supposed—the water acting as a lubricator and protector from abrasion with the ore—they are costly in make and maintenance. For coarser sizes they can not be successfully replaced by any known apparatus, but for the sizes from stamp batteries (one and one-half millimeters and less), classifiers of another system and based on other principles may be employed with good success. As an instance of this class of classifiers, we quote an apparatus known as

The Wengler Classifier.

This apparatus, although lately patented in the United States, has hardly any feature which would be maintained as new and as not applied in practice and described in print a long time previous to the patentee's application, it being the old Spitznagel with an arrangement of water supply and discharge more or less modified in unessential parts from what was customary.

The Wengler classifier consists of five reversed pyramidal-shaped vessels, increasing in size, which vessels, when full, are in communication with each other; they are shown in the engravings from I to V. From the bottom of each vessel there extends a tube, as shown at a, b, c, d and e, and each tube is connected with a tubular foot piece, as shown at f, g, h, i and k. From a trough, G, situated some distance above the apparatus, a series of five tubes, l, m, n, o and p, extend down and connect each with one of the foot pieces. The trough, G, serves as a clear water conduit to supply water to the tubes f, g, h, i and k. Attached to each of the tubes last mentioned are small sluices or gates, q and r, intermediate between which is the lower end, a, b, c, d or e, of the vessel which opens into the tube. The sluices serve to regulate the influx of water, and the efflux of the ore or kernels of ore.

The trough, H, serves as a conduit for the stamped material as it comes from the stampers. At the other end of the apparatus is another trough, J, which carries off the slime.

The water in the trough G, is, as before stated above, the level of that in the main portion of the apparatus, and it therefore has a more powerful head; consequently, if the sluices be so adjusted that the efflux opening at r is smaller than the influx opening at p, then a part of the pure water which would otherwise flow out at r, will reach up and against the downward current on, for instance, the tube a. It will therefore be seen that it is possible for each grain, only, whose weight is greater than the resistance of the upward reacting stream, to flow out at r, the other and finer ore, together with the slime, flowing over into section II, where the same operation is repeated, only on a finer scale, and so on to the last section or vessel, which receives all the slimes and the ore of ultimate fineness. Here the operation is again gone through with, and, by a simple adjustment of the sluices of this last section, all the slime is made to pass over into the trough J.

The sorting of the different sizes can be accurately regulated, inasmuch as the slightest movement of the sluices has a remarkable influence upon the classification, and according as the reacting stream is stronger or weaker, the grain classified thereby from the mass of stamped ore will be correspondingly coarser or finer.

But in this influence exercised on the action by the movable sluices or slides consists the weak point of the system in practice. The apparatus is not self-acting automatic as screens are, but requires skilled regulation, not only when put up, but constantly, and the least change or interference with the sluices, slides or valves destroys the correct action totally. Where skilled labor is scarce and therefore costly, the more reliable system of classifying by screens is preferable.

Out of 1,357 cases of small-pox reported in this city since May 19th, 1875, there were 385 deaths. The number of deaths from diphtheria since July 1st, 1875, was 454, of which 110 occurred in December. In the four weeks ending January 28th there were 118 deaths from this disease.

The importation of fanned cattle and sheep from Germany, England, Russia, Austria, and Turkey into Belgium, is prohibited by royal decree. The British authorities have issued further stringent orders against the importation into Great Britain from Germany and Belgium, of cattle, hay, hides, horns, fat, hoofs and fresh meat.

The first engine built in San Luis Obispo county has just been turned out at Philbrick & Barnsborg's shop. It is of 30 horse-power.

GRANITE MILL

COMSTOCK HISTORIC DISTRICT COMMISSION

This mill is owned by the Parke, Bros. and is under their superintendence. It has sixteen stamps and eight Wheeler pans, and can work 28 tons of ore every 24hr. The power is supplied by a 45 horse power engine. There are 4&1/2 cords of wood used per day at this mill aand 10 men employed.
Gold Hill News, June 27, 1865

The Granite Mill has sold its old machinery, which will be moved to White Pine.
Territorial Enterprise, 1870,

COMSTOCK HISTORIC DISTRICT COMMISSION

BOWERS' Mill

Situated in Crown Point Ravine. Owner - Mr. & Mrs. L.S. Bowers and super-James Livingston. It has 20 stamps, 30 common style muller amalgamating pans, 22 ton crushing capacity daily. 65 horse power steam engine, five & 1/2 cords wood per day. 14 employees.

Gold Hill News, June 27, 1865

Bower's Mill located (1863) in Crown Point Ravine - 20 stamps, 30 five foot pans, 125 tons weekly; 1864, working day & night, 1,451 tons monthly; 1865, auctioned for taxes, working again, 20 stamps, 5 1/4 cords wood daily; 66, rented to Mr. Colwell and starts up again after dormant summer; 67, Milling ore from Bower's mine; 68, mill for rent one year; 69, 3 batteries, 5 stamps each, 18 pans -- destroyed by fire. Territorial Enterprise, 1863-69.

Collins & Co. prop; steam powered, twenty stamps, sixteen pans.
Gold Hill News, June 5, 1865.

✓GOLD HILL MILL

Owner? - Gold Hill quartz M. & M. co. F. Chappellet, super. 14 stamps, 24 co-mon amalgamators, and two of Farrand's Patent Oscillating amalgamators. This mill works 18 tons ore per day ~~and~~, 36 hp. engine requires 3 cords of wood lper day. 13 employees.
Gold Hill News, June 27, 1865

The Gold Hill Quartz Mill is being dismantled. The mill was built in 1861. The land will be divided up into building lots.

Territorial Enterprise, April 1875.

The mill was erected in 1861(spring). Building seventy-four by thirty-five feet; steam engine of thirty five horse-power from the Pacific Foundry. Thirteen stamps and crushes ten tons of ore per day. Twenty-four pans with steam chambers., and heavy mullers. Purchased fourteen feet of celebrated Rice claim. Capital of 250,000 dollars. P. Pioda, sup.
Second Directory of the Nevada Territory, 1863, p. 310.

RHODE ISLAND MILL

COMSTOCK HISTORIC DISTRICT COMMISSION

Mill owner, H.B. Potter, T.V. Barney and Geo. L. Smith . situated in lower part of Gold Hill. Mr. Potter is super. 25 stamps, 20 seven foot amalgamating pans, capacity for 35 tons of ore per day. Driven by 45 hp steam engine and employes 15 men. Uses 5 cords of wood per day.
Gold Hill News, June 27, 1865

Five stamps were added ca. 1870's *Mill still in operation, 1887*
Mining and Scientific Press, 1887, v54.

This mill was built in the fall of 1862, under the supervision of George L. Smith, the present sup. Forty horse-power engine, twenty stamps of six hundred pounds each. Uses the wet crushing and "sage brush" process. Building one hundred feet by fifty-three.

Second Directory of the Nevada Territory, 1863, p. 311.

Twenty-five stamps, twenty-two pans, five settlers, two agit, six amal, five concen. Ownership: Crown Point Mining Co.
U.S. Census, 1870.

The Rhode Island Mill is currently idle and awaiting the completion of the Belcher tunnel which will enable it to run Belcher ore to the mill.

Territorial Enterprise, 1870,

COMSTOCK HISTORIC DISTRICT COMMISSION

The Rhode Island Mill (owned by the Crown Point Mining Co,) has entirely replaced its battery of stamps. A tank 110X36 ft. for catching slimes has been placed within 50 ft. of the mill. it is dividèd into 30 compartments.
Mining And Scientific Press, July 18, 1874.

✓SAPPHIRE MILL

COMSTOCK HISTORIC DISTRICT COMMISSION

Situated in lower part of Gold Hill. owner - Sapphire Quartz Mill company super is F. Chappelet, Esq. 16 stamps and 40 pans, works 20 tons of ore per day but in a few weeks will have sixteen more pans added to its amalgamating machinery. capacity will be increased to 25 tons per day. 40 hp steam engine, uses four cords of wood every 24 hrs. 12 men employed. Gold Hill News, June 27, 1865

Prop. J.B. Gagnon & Co. Building sixty-one by fifty-eight feet. Steam engine of thirty-four horse power. Sixteen stamps, Thirty-two Knox steam flue pans. Second Directory of the Nevada Territory, 1863, p. 311.
J. B. Gagnon, Sup.

Machinery includes eighty horse-power engine, sixteen stamps, twelve pans, two pumps, three settlers, three agit, , eighteen amal, four arrastras, twenty cushers. Ownership: W.S. Hobert
U.S. Census, 1870.

Operating in 1882.

Production of Gold and Silver in the U.S., 1882, p. 157.

The Sapphire Mill is now running on Caledonia ore.

Territorial Enterprise, 1873,

✓ Parke & Bowie Mills (Express and Railroad Mills)

The Parke & Bowie Mill was possibly the first tailings mill on the Comstock. It was built in the late 1860's for the purpose of treating tailings. The process was perfected in 1866 by Louis and Henry Janin and Ira S. Parke. Up until this development, many thousands of dollars in ore tailings were lost down the Carson River from the Gold Canyon mills. In 1870, the Parkes & Bowie Mill was reported to have a twenty horse-power engine, six pans and seven settlers. In 1871-72, there were two Park & Bowie tailings mills listed in Six Mile Canyon vicinity. Its termination date is unknown but a mill by the name of Bowie is mentioned as in operation in 1887.

Smith, Grant. The History of the Comstock Lode, p.257; U.S. Census, 1870; Report of the Nevada State Mineralogist, 1871-72, p. 138; Mining and Scientific Press, Vol. 54, Feb. 19, 1887, p. 121.

The two tailings mills that Parke owned were the Parker or mill Railroad and the Express, both located in Six Mile Canyon.
Territorial Enterprise, May 1877, p. 3.

PETALUMA MILL

Owner - A.L. Greeley. 8 stamps, 18 common miller amalgamators pans. 20 hp engine capable of working 12 tons of ore per day. Consumes 2 and 3/8 cords of wood every 24 hrs. 8 employees.

Gold Hill News. June 27, 1865

Operated as a tailings mill ^{possibly as a tailings mill} in 1882.
Production of Gold and Silver in the U.S., 1882, p. 156.

The Petaluma Mill which has been running for years on Crown Point ore has been shut down and all hands discharged.
Territorial Enterprise, May 1976.

In 1870, this mill had twenty-four stamps, ten pans Ownership: Saron & Mackay.
U.S. Census, 1870.

Twenty-four stamps, steam powered, 1887.

Mining and Scientific Press, ~~1887~~ (Vol, 54), Feb. 19, 1887, p. 121.

Machinery from the Pacific Foundry, San Francisco. Works both gold and silver.
Running since July, 1862 on custom ore. Prop. Fritsch, Zentman & Co and
leased by David B. Hunt and P.G. Childs.
Second Directory of Nev. Terr., 1863 p. 311.

EMPIRE MILL

CONTRACT HISTORIC DISTRICT COMMISSION

Property of the Empire M&M co. super - Mr. Bivins, under the general super of R.T. Graves. (super of the Co.). 16 stamps, 12 wheeler pans and works 30 tons of ore per day. Seven cords of wood consumed every 24 hrs.
Gold Hill News, June 27, 1865

Empire mill is working Ophir ore.
Territorial Enterprise, april 1875.

The Empire Mile located in Lower Gold Hill is being torn down.
Territorial Enterprise, Oct. 1873.

Empire mill was founded in 1863.
Ibid, 1863.

✓EMPIRE STATE MILL

Chas. Coover and L. Dunn, prop. Situated at the foot of Sugar Loaf Peak. Water and steam powered; water wheel forty feet in diameter, fifteen horse-power engine ten stamps, twelve ton capacity per day. Crushes rock from Gold Hill. Latrop Dunn, Superintendent.

Second Directory of the Nevada Territory, 1863, p. 163.

The stamps were increased to fifteen by 1866 and the capacity to fifteen tons per day. This mill was reported idle in 1871-72.

Report of the Nevada State Mineralogist, 1866, p. 148; 1871-72, p.138.

The mill was apparently still in operation in 1887 when it was reported to have five stamps and functioning on water power.

Mining and Scientific Press, Vol. 54, Feb. 19, 1887, p. 121.

The Empire State Mill is running on Chollar Ore.
Territorial Enterprise, May 1877.

The Empire Stae Mill in Seven Mile Canyon is now crushing ore from the Ophir Mine
Territorial Enterprise, April 1875.

The Empire State Mill will reopen on Chollar-Potosi ore,
Territorial Enterprise, Oct, 1873

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COMSTOCK HISTORIC DISTRICT COMMISSION

✓ DOUGLAS MILL

Located in Gold Canyon. Steam-powered ten stamp mill, twenty-six pans, capacity of sixteen tons per day (1866). Number of stamps increased to fifteen stamps with forty-five ton capacity in 1871-72. At this time, the mill was crushing ore from the Empire and Gold Hill mines. Report of the Nevada State Mineralogist, 1866, 1871-72.

Owned by C.C. Stevenson in 1870.
U.S. Census, 1870.

#86 Douglas Mill (very old foundation remnants)

Walt Mulcahy, Location Map. Walt comments that this was the Joe

Douglas Mill, the same individual who built the Washoe Club in V.C.

From the Douglas Mill, a narrow gauge railroad five miles long ran down the river to a large tailings reservoir near Dayton.

De Quille, A History of the Comstock Silver Lode & Mines, 1889, p. 104.

over, 111

COMSTOCK HISTORIC DISTRICT COMMISSION

ATLAS MILL

~~XXXX~~

Situated about 3/4 mile below Gold Hill and owned by Messrs. Seale & Anderson. but is now leased to Starr and Hardy. O. H. Smith is super. 15 stamps, and 8 Hepburn pans and crushes 26 tons per day. driven by 45 horse power steam engine, requires five cords of wood per day, employees 11 men.
Gold Hill News, June 27, 1865

Operating in 1882.

Production of Gold and Silver in the U.S., 1882, p. 156.

in 1865 it was processing 26 tons per day, had 15 stamps, steam powered. Advertised for sale, located across from the Piute Mill
Territorial Enterprise, 1865.

✓RAMSDELL MILL

Situated in Gold Canyon, a little distance above the Silver Hill mine.
Steam-powered 2-stamp mill (700 pounds each) with six Hepburn amalgamating
pans. Mr. Joseph B. Ramsdell, owner.
Mining and Scientific Press, 10-10-1874(Vol. 29) p. 226.

Four stamps, four pans, two pumps, three amal., two concentrators,
ten arrastras. Ownership: Ramsdell & Thompson.
U.S. Census, 1870.

The Ramsdell Mill at Devil's Gate is now running on ore from the Silver City mine.
Territorial Enterprise, April 1876.

The Ramsdell mill is running on Woodville ore - mostly gold.
Territorial Enterprise, 1873,

*Ramsdell Mill - 2 stamps, running on Woodville ore.
R.N.S.M. - 1874-75*

OCCIDENTAL MILL

Tailing mill located in the Silver Star District, Storey Co. 20 stamps.
Report of the Nevada State Mineralogist, 1871-72, p. 138.

Sixty horse-power engine, thirty stamps, fifteen pans, eight amal.,
 four concentrators, and twenty crushers. Ownership: Occidental
 Mining Co.
U.S. Census, 1870.

The Occidental mill has twenty stamps.
 Territorial Enterprise, April 1875.

The Occidental Mill is now running occidental ore. A flume has been built from V.C.
 to the mill.
 Territorial Enterprise, 1873

An 1870 description of the mill under construction is available in...
 Ibid., 1870.

✓OMEGA MILL

Situated in Six Mile Canyon, on the former site of the Gould & Curry Mill. This
 mill was built sometime in the 1870's as a tailings mill. It appears on the U.S.G.S.
 Map for 1877 and in mill returns throughout the early 1880's. The Mining and Sci-
entific Press noted in 1882 that the Omega Mill might possibly be moved to Ophir
 Flat to work a large pile of tailings there (Vol. 45, Oct. 7, 1882, p. 231).

Territorial Enterprise, May 1877.

New Tailings Mill, called Omega, at the junction of Six and Seven mile Canyon. has been
 completed and will start up tomorrow. Situated at the site of the Gould & Curry Mill.
 New engine rests on old engine bed, has 20 large sized pans and 10 settlers, capacity
 of 200 tons per day, employes 100 men. The engine is a 400 hp corliss type. Supplied
 with tailings from the Consolidated-Virginia & California mines. The mill has a set of
 sluices 1,200 feet long by 24 feet wide. Also has 3 Towle's concentrating tables.

Enter request: 2

Detail Display of Corporate Data for Texas
For: HUGHES TOOL COMPANY

Thru Date: 10/15/93

Item Number: 0001
Name: SUMMA CORPORATION
Number: 0000648106
Date: 10/23/1929
Originated: DE
Type: FOREIGN PROFIT
Duration: PERPETUAL
Status: WITHDRAWAL (FOREIGN CORP TYPE 6 & 7)

REGISTERED AGENT INFORMATION

FOR SERVING S.O.S. MAIL TO
PAUL B. WINN, 3800 HOWARD HUGHES PKWY. LAS VEGAS NV 89109

MISCELLANEOUS ADDRESS

Tax Address: TAX ADMINISTRATION DEPT
PO BOX 14000 LAS VEGAS NV 89156-0000

OFFICER/DIRECTOR INFORMATION

DIRECTOR: LUMMIS, WILLIAM R - DIRECTOR
PO BOX 14000 LAS VEGAS NV 89156-0000
DIRECTOR: COX, JAMES A*JR - DIRECTOR
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: LUMMIS, WILLIAM R - CBP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: COX, JAMES A*JR - EXECUTIVE VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: GOOLSBY, JOHN L - EXECUTIVE VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: ALDERFER, JOHN W - SENIOR VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: IVY, DAVID L - SENIOR VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: OLSON, VERNON C - SENIOR VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: TAYLOR, ARTHUR M - SENIOR VP
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: CARTER, CAROLE A - VICE PRESIDENT
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: MCMILLAN, CHARLES H - VICE PRESIDENT
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: MORGAN, THOMAS L - VICE PRESIDENT
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: WINN, PAUL B - SECRETARY
PO BOX 14000 LAS VEGAS NV 89156-0000
OFFICER: NIARCHOS, MICHAEL C - ASSISTANT SECRETARY
PO BOX 14000 LAS VEGAS NV 89156-0000

OWNED and OWNING COMPANIES:

Subsidiary Company: HTC DE MEXICO, S.A. DE C.U
 File No: 0000000000 Subsid Corp Type : 00
 State: MM Percentage Owned: 0100
 Subsidiary Company: PLAYA VISTA CORPORATION
 File No: 0000000000 Subsid Corp Type : 00
 State: DE Percentage Owned: 0100
 Subsidiary Company: SUMMA INTERNATIONAL CORPORATION
 File No: 0000000000 Subsid Corp Type : 00
 State: DE Percentage Owned: 0100
 Subsidiary Company: HUSITE, INC.
 File No: 0000000000 Subsid Corp Type : 00
 State: NV Percentage Owned: 0100
 Subsidiary Company: H-TEX, INC.
 File No: 0226638000 Subsid Corp Type : 00
 State: TX Percentage Owned: 0100
 Subsidiary Company: HTC DE MEXICO S A DE C U
 File No: 0000000000 Subsid Corp Type : 00
 State: MX Percentage Owned: NOT ON FILE
 Subsidiary Company: PLAYA VISTA CORPORATION
 File No: 0000000000 Subsid Corp Type : 00
 State: DE Percentage Owned: NOT ON FILE
 Parent Company: THE HUGHES CORPORATION
 File No: 0000000000 Parent Corp Type : 00
 State: DE Percentage Owning: 0040

CORPORATE TAX INFORMATION

SOS Tax ID: 017406988000
 Standing: Comptrollers Franchise Tax Not on File
 Tax Year Ends: 1988

HISTORY INFORMATION

DATE	NUMBER	DESCRIPTION
11/17/1936		NAME CHANGE
	Changed from:	HUGHES INDUSTRIES CO LTD
12/12/1972		NAME CHANGE
	Changed from:	HUGHES TOOL COMPANY
03/16/1988		WITHDRAWAL (FOREIGN CORP TYPE 6 & 7)
END OF DATA		